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Telegrams—LANCET, WESTRAND LONDON. *Telephone*—TEMPLE BAR 7228 & 7229. *Offices*—7, Adam Street, Adelphi, W.C.2

No. XXIII. OF Vol. I., 1930.
No. 5571. Vol. CCXVIII.

LONDON, SATURDAY, JUNE 7, 1930.
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Delivered before the Medical Society of London

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CONSULTING UROLOGIST TO KING'S COLLEGE HOSPITAL; SURGEON TO ST. PETER'S HOSPITAL.

LECTURE II.*—SELECTION OF CASES OF ENLARGED PROSTATE FOR OPERATION.

(Delivered on Feb. 26th.)

THE cases on which McGill and his contemporaries operated were cases where catheter life had been tried and had failed. All other cases were treated by the regular passage of the catheter. At the present time catheter life, or permanent bladder drainage, is only used in cases that are unsuitable for operation. The conditions under which cases of enlarged prostate are selected for operation have therefore been reversed. When did this change take place? Undoubtedly at the time when the perineal method was simplified by the French surgeons and the suprapubic operation was popularised by Freyer. It was one of those changes that come about almost without comment and is accepted without being definitely stated. It would seem as strange now to put all cases of prostatic enlargement on the catheter as it would, in McGill's day, have seemed out of the question to submit all cases to operation. As late as 1901 Cabot of Boston[1] expressed his view that operation should only be done in carefully selected cases, and that the greater proportion of cases should be treated by the intelligent use of the catheter. Three years later (1904) I wrote,[2] in a review on the "present status of suprapubic prostatectomy for enlarged prostate," as follows: "The question that presents itself to the surgeon in cases of enlarged prostate is not now whether catheter life, vasectomy, orchidectomy, ligature of the internal iliac arteries, permanent suprapubic bladder drainage or prostatectomy should be recommended, but whether the case is suitable for prostatectomy and, if so, what form of prostatectomy should be performed." In considering what cases are suitable for prostatectomy we have to consider: (1) the prostate; (2) the urinary organs; (3) the general condition of the patient.

It would be out of place here to discuss such elementary matters as the examination and diagnosis of enlargement of the prostate gland. I shall select two types of enlarged prostate for discussion—namely, the fibrous prostate and the malignant prostate.

The Fibrous Prostate.

The term "fibrous prostate" has crept into surgical nomenclature without any very careful definition of its pathology. A surgeon will regard any prostate of small size which causes symptoms of chronic obstruction and irritation and which resists digital enucleation as a "fibrous prostate." It is not surprising, therefore, to find a number of different pathological conditions included under this clinical term.

From a series of 185 prostates in which full histological details were obtained, I have selected those weighing 20 grammes or under as representing prostates of this type. A prostate of 18 or 20 grammes after removal does not appear larger than one would judge the normal prostate to be. There were 44 prostates of 20 grammes or under (23·7 per cent.) Microscopical examination of these specimens gave reports as shown in Table I.

TABLE I.

Adenocarcinoma	1
Adenoma with little change in stroma	14
Adenoma with amyloid bodies	3
Hyperplasia of the stroma	5
Chronic prostatitis and fibrosis of stroma	14
Multiple small calculi	7
	44

Clinical examination of these patients gave no indication as to the nature of the change. The prostate was usually regarded as slightly or moderately enlarged on rectal examination, and was elastic and movable. In one case of adenoma with multiple amyloid bodies it was noted as "granular." The calculi in these prostates were so small that they were not detected with the rectal finger. The cases of small adenoma varied in their ease of removal. Where there was an intravesical nodule the enucleation might be comparatively easy, but in some of these cases, and also in cases where no circumscribed intravesical projection existed, the enucleation was difficult and usually developed into a dissection of the prostate under the eye. In the cases of fibrosis and chronic prostatis enucleation was easy in one case and moderately difficult in another. In the remaining cases clean enucleation was not possible and the gland was dissected out under the eye. Where calculi were present there was usually a good deal of difficulty in enucleation, and most of these cases required dissection. Two other glands, larger than the group of 20-gramme prostates, were diagnosed microscopically as chronic prostatitis. They weighed 23 and 27 grammes respectively. Both these prostates had a well-developed intravesical projection. They shelled out without difficulty.

There is another type of fibrous prostate that is not included in the foregoing list. In this type an adenomatous prostate has been subjected to treatment, such as deep X ray therapy, that has caused fibrosis of the stroma, and adhesion of the gland.

From the foregoing it would appear that the surgical term "fibrous prostate" covers a number of different pathological conditions—namely, early adenomatous enlargement, chronic prostatitis, fibrosis of the stroma, scattered prostatic calculi, with fibrosis, and a form of early malignant growth which develops round the internal meatus, all of which may produce similar clinical symptoms. The condition cannot be diagnosed with certainty before operation. At operation difficulty of enucleation is the principal feature, and it may be impossible to remove the gland by this method. By transvesical dissection under the eye these prostates can be cleanly and thoroughly removed.

The Malignant Prostate.

There are two distinct clinical forms of malignant growth of the prostate that may be termed primary and secondary. In the primary malignant prostate the change in the gland is, clinically at least, cancerous from the outset; in the secondary malignant prostate the gland has at first the character of the ordinary enlarged prostate and the malignant changes are engrafted upon this. The proportion of primary malignant prostates to simple is about 1 to 6. In 2496 cases of enlargement of the prostate examined by me in private practice, there were 347 cases of undoubted malignant growth and 2149 cases of simple enlargement. Thus the percentage of malignant growth was 13·50 and of simple enlargement 86·50.

The secondary malignant growth of the prostate is engrafted on a simple enlargement of the gland. These patients come to the surgeon with the symptoms of simple enlargement of the prostate gland, and rectal examination confirms the diagnosis. The malignant growth may develop in one of three localities. It may infiltrate the base of the prostate in the neighbourhood of the internal meatus and not

* Lecture I. appeared in our issue of May 31st.

be discovered until operation is undertaken. When the surgeon attempts enucleation, the tissues at the bladder neck are found to be leathery and resisting so that no impression can be made with the finger. This is one type of the so-called "fibrous prostate" and has already been discussed. The second area that may be affected is the periphery of the enlarged gland. In these cases the examining finger recognises an enlarged prostate of elastic consistence. At one part there is a firm area, and there may be some loss of mobility of the tissues at this part. At the operation the enucleation proceeds easily except at this area, where the gland is tough and adherent, and not infrequently a leathery plaque is left behind in the wall of the prostatic bed. In the open operation this may be dissected away after removal of the prostate.

The third type is where the malignant change has developed in the substance of the enlarged prostate. The clinical features are those of a simple enlargement of the gland and at operation the enucleation proceeds smoothly. The specimen has the usual appearance of a simple enlargement of the gland. The report of the pathologist is that there are one or more areas in which the stroma of the organ has become invaded by columns of cells, and that these areas are of a malignant nature. Attention was first drawn to this type of case by Albarran and Hallé,[3] who examined 100 specimens removed as simple enlargement of the prostate and found evidence of carcinoma in 14. The subject has also been discussed by Wade,[4] Swan,[5] and myself.[6] I have since extended my observations. In 521 cases in my private practice, where a report was obtained from the pathologist on the specimen removed by suprapubic prostatectomy, there were 96 cases (18 per cent.) in which areas of carcinoma were discovered. In these cases there was no suspicion of malignancy before the operation, and the operation was performed by enucleation under the belief that the prostate was the seat of simple enlargement. In the following series of cases (Table II.) malignant disease was found on microscopical examination of prostates enucleated for simple enlargement.

TABLE II.

	Cases.	Malignant.
Albarran and Hallé	100	14
Wade	134	14
Swan	20	4
Thomson-Walker	521	96
	783	126 (16%)

The prognosis in such cases is important and interesting. I endeavoured to trace the subsequent history of the 96 cases in my series. (Table III.)

TABLE III.—*After-history of Ninety-six Cases of Enucleated Prostate in which Malignant Areas were Found.*

Died within a year from other diseases	13
Not traced	17
Alive without recurrence	41
Dead without recurrence	23
Dead with recurrence	2
	96

Sixty-four Cases without Recurrence.

	Alive.	Dead.
1– 5 years	6	9
5–10 „	28	8
10–17 „	15	6
	41	23

It will be seen in Table III. that of 66 cases traced for a sufficiently long time there were only two (3 per cent.) in which the malignant growth recurred.

URINARY COMPLICATIONS.

Of all the risks to which the sufferer from enlargement of the prostate is exposed, those connected with the urinary organs are the most common and also the most frequently fatal. These complications are, however, to a large extent amenable to treatment before operation. They are renal inefficiency and sepsis.

Renal inefficiency.—With the increasing obstruction of an enlarged prostate and the accumulation of residual urine the renal function is impaired, nitrogenous products are eliminated in reduced proportion by the kidneys and accumulate in the blood, and a train of symptoms, that we know indicate a varying degree of uræmia, arises. These clinical symptoms are invaluable in the diagnosis of renal inefficiency, but there are cases of serious impairment of the renal function where they are slight or absent, and they frequently fail to record the variations in the renal efficiency which accompany surgical measures used in the relief of urinary obstruction. For over 30 years urinary surgeons have endeavoured to measure the renal function accurately by means of special tests,[7] and of late years they have received valuable assistance from the biochemist and the physician. It is not my intention to pass in review all the tests of the renal function at present in use. It will be of greater value if I relate my personal experience in the tests that I use.

The form of renal inefficiency that results from urinary obstruction is that in which the nitrogenous products are excreted in diminished quantity in the urine and accumulate in the blood. It follows, therefore, that estimation of the activity of the kidney in excreting nitrogenous bodies, together with an estimation of the nitrogenous bodies in the blood, should give an accurate indication of the efficiency of the renal function in urinary obstruction. Urea is the chief of these nitrogenous bodies, and it is sufficient to estimate the urea excretion and the urea retention. The activity in nitrogenous excretion is measured by the urea-concentration test introduced by MacLean[7] and de Wesselow, and the nitrogenous retention is measured by estimating the urea content of the blood. In MacLean's test a urea meal is given and the blood is overloaded with urea. The urea excretion of the kidney is thus forced up to its full limit. This test overcomes one of the difficulties of the tests of the renal function—namely, that the functional activity of the kidneys is not fully exercised at any time under ordinary conditions of health. There is a margin of safety in the amount of renal tissue that amounts to more than half the total renal tissue, and there is a corresponding margin of potential function. In a series of 274 cases of enlargement of the prostate gland in which prostatectomy was performed I have tabulated the figures of the urea-concentration test. (Table IV.)

TABLE IV.—*Urea-concentration Test in 274 Cases of Cystotomy and Prostatectomy.*

	Cases.	Deaths from uræmia.
2·0% and over	194	0
1·8 to 2%	21	1 (4·7%)
1·5 to 1·8%	34	3 (8·8%)
1·0 to 1·5% or under ..	25	3 (12%)

In 194 of these cases the urea-concentration figure was 2 per cent. or over. In this class there were no deaths from uræmia. There were 21 cases where the urea-concentration figure was from 1·8 to 2 per cent. In this class there was one death from uræmia (4·7 per cent.). The urea-concentration figure was 1·5 to 1·8 per cent. in 34 cases, and of these three died of uræmia (8·8 per cent.). One death followed cystotomy, and the other two deaths were after the second stage of a two-stage prostatectomy. In 25 cases the urea-concentration figure was from 1·5 to 1 per cent. or under. Of these, three died of uræmia (12 per cent.). The principal interest in these figures lies in the cases where a high urea concentration was obtained and the patient died from uræmia, or where a low urea concentration was recorded and the patient survived.

The single death that occurred in the class 1·8 to 2 per cent. was after the second stage of a two-stage prostatectomy.

The bladder had been drained through a suprapubic cystotomy wound for six weeks on account of renal inefficiency. The urea-concentration tests made from time to time were always 1·6 or below this, but on one occasion the test rose to 1·9 per cent. The operation was a difficult and severe one, and the patient died on the third day with auricular fibrillation and symptoms of uræmia. Old-standing heart disease was present. It is possible that had the operation been a simple one this patient might have survived, but the solitary observation of 1·9 per cent. was evidently not sufficient to justify a severe operation.

The cases where the urea concentration was 1·5 per cent. and below are of extreme interest. Of the three cases that died of uræmia, two died after cystotomy without removal of the prostate. One case was a two-stage prostatectomy. Twenty-two cases with a urea-concentration figure of 1·5 or under survived the operation of prostatectomy. In three of these a preliminary cystotomy was performed, and the urea-concentration figure, after an interval of one to several weeks, rose to 2 per cent. or over, and all survived the second stage. In ten cases where the urea remained at 1·5 or under a second-stage prostatectomy was performed and the patients survived. Nine cases where the urea concentration was 1·5 per cent. or under survived a single-stage prostatectomy, following preliminary drainage by the indwelling catheter.

The conclusion that may be drawn from these 274 cases is that there is no risk of uræmia following prostatectomy if the urea-concentration figure is 2 per cent. or over, but that there is a slight risk where the reading is 1·8 to 2 per cent., and that a single reading of 1·9 per cent. is not sufficient to establish the case in this safe zone. There is a very serious risk where the figure is below 1·8 per cent., and more so where it is under 1·5 per cent. Further, with extreme care it may be possible to operate successfully even where the urea concentration is below 1·5 per cent. Such patients may recover where no complications arise such as bronchitis, hæmorrhage, or sepsis, but they stand very little chance of surviving a complicated post-operative course.

Estimation of the urea content of the blood gives additional information about the functional activity of the kidneys in the excretion of nitrogenous bodies. In the azotæmic type of renal disease that occurs in urinary obstruction urea does not begin to accumulate in the blood until the kidneys are seriously damaged. It is, therefore, only in cases of advanced disease of the kidney that the estimation of the blood-urea is likely to be of use to the surgeon. The normal urea content of the blood is from 20 to 40 mg. per 100 c.cm. MacLean points out that these figures are too low in dealing with old men, and a blood-urea of 40 to 50 mg. per 100 c.cm. may be present without indicating serious impairment of the renal function. It is recognised that the ultimate cause of the symptoms grouped under the term uræmia is not the accumulation of urea in the blood, but this accumulation runs closely parallel with the production or the accumulation of the chemical body that causes uræmia. The parallelism is not, however, always so close as to make the blood-urea figure an absolutely reliable test of the imminence of uræmia. It is possible, for instance, for a patient to die of uræmia and the blood show a low urea content. MacLean describes a case where the blood-urea was reduced from 120 mg. to an average 30 or 40 mg. per 100 c.cm., yet the patient died of uræmia. A very low protein diet may so reduce the blood-urea as to make the observation worthless. Again it is possible to have a very high blood-urea and the patient be in no danger of uræmia. As de Wesselow points out,* "there is a whole series of conditions in which inadequate water is available for excretion of urea, and in which the blood-urea reaches a high level as the result, even though no renal lesion is present. The rise in blood-urea is favoured by the fact that desiccation in itself leads to excess of katabolism of protein and to excessive urea formation." Further, an excessive protein diet will raise the blood-urea content. In most cases, however, the urea content of the blood varies inversely to the percentage of urea secreted in the urea-concentration test and, as the range of figures is wider, the test is more sensitive to temporary variations in the renal function, if sources of fallacy such as diet and fluid intake be controlled. I have noticed that while the urea-concentration figures may remain steady for some time at a low level, the blood-urea figure may during this time show considerable variation, which closely corresponds to the improvement or retrogression in the general condition of the patient. The blood-urea content is invaluable in watching the progress of a case where the bladder has been drained for chronic retention with serious renal inefficiency.

In another class of case blood-urea estimation is of great value. A patient known to suffer from renal inefficiency develops symptoms of coma or cerebral irritation or some other group of symptoms that are not clearly uræmic. The presence of a high blood-urea may elucidate an otherwise obscure problem. I have met with examples of this in relation to renal tuberculosis, as well as during convalescence from prostatectomy.

It is not necessary for a successful prostatectomy that the renal function should be perfect or even approximately perfect. A reduced renal function may be adequate for the operation. The laboratory figures of the renal function tests form only one factor among many in estimating the prognosis for operation. The general build and constitution of the patient, the soundness of other organs, the experience and skill of the operator and of those who have the immediate care of the patient after the operation, and the surroundings in which recovery from the operation will take place are all factors that profoundly influence the result.

Sepsis.—Sepsis in relation to the enlarged prostate and prostatectomy is a failure of surgical methods. The infection may occur before the operation, it may be introduced at the time of the operation, or it may occur subsequent to the operation when the cystotomy wound is still open. At present I am concerned with infection before the operation. The simpler cases are those in which the infection is confined to the bladder. These are sometimes complicated by attacks of epididymitis. In old-standing cases a very heavy infection may remain localised to the bladder and have no general toxic effect on the patient. The more complicated cases have pyelitis or pyelonephritis in addition to the cystitis. In the latter cases there are recurring attacks of fever, and eventually the patient drifts into the condition known as urinary septicæmia, a combination of bacterial toxæmia and uræmia.

If the infection is recent and moderate, and there is no evidence of renal involvement, a few weeks' preparation by thorough bladder washing and removal of the residual urine, either by intermittent catheterisation or by the resident catheter, together with diuresis and urinary antiseptics, will suffice as a preparation for the removal of the prostate. When a more severe grade of sepsis is present it will be necessary to perform suprapubic cystotomy and drain the bladder. This is prostatectomy in two stages, and I shall refer to the two-stage operation later. The question that I wish to discuss at present is the selection of cases for prostatectomy where sepsis is present and has been treated. In the mild cases, when the infection has been confined to the lower urinary tract, there is no difficulty. Some extra care in regard to irrigation after the operation will be necessary in such cases. Where the infection has been severe the decision is a more difficult one. When the sepsis has been confined to the bladder it usually clears up quickly as the result of drainage and constant irrigation. When pyelitis and pyelonephritis are present the general condition of the patient will usually improve with bladder drainage, and the question of prostatectomy will have to be faced.

The tests that can be applied to such a patient, and their value, may be considered under the following headings: (1) general condition of the patient; (2) condition of the urine; (3) renal function tests; and (4) cholesterol content of blood.

The first two of these headings I need not discuss further. The renal function tests have been used to decide the question of prostatectomy in these cases, but do no more than indicate the secretory activity of the kidneys at the time of the test. Although in the later stages of bilateral pyelonephritis the renal function is profoundly altered, a kidney may be the seat of septic infection and yet maintain a high grade of functional activity. The danger in these septic cases, where prostatectomy still appears feasible, is that the operation will cause a flare up of the infection which is fatal, either by bacterial toxæmia or uræmia or both.

A method which promises greater accuracy is the estimation of the blood cholesterol. Cholesterol plays an important but as yet ill-defined part in the process of immunity, stimulating, it is believed, the production of antibodies. Macadam and Shiskin [10] have suggested that the cholesterol content of the blood should be used as a measure of the resistance to infection possessed by the individual. These investigators concluded that the cholesterol content of the blood was a fair measure of the degree of resistance to infection, and should form a useful guide to the degree of operation risk in cases of urinary obstruction. The normal average cholesterol content of the blood was stated at 0·161 per cent., with a range of 0·191 to 0·133 per cent. More recent observations by Gardner [11] extend the limits of the normal cholesterol content of the blood in health, this observer having found figures varying between 0·08 and 0·23 per cent. in normal adults. Maxwell [12] holds the view that probably each individual has a definite level somewhere within these limits, from which level there is very little variation in health. In disease it is possible for the cholesterol content to vary to quite a considerable degree before the figure transcends the normal limits laid down above. Thus the minor abnormalities may pass unnoticed. The blood cholesterol is liable to be affected by many external factors, all of which are not fully recognised. It is known to be increased in arterio-sclerosis, granular kidney, and other degenerative conditions of later life. In anæmia, especially where the red cell count falls below 50 per cent. of the normal, the cholesterol content is diminished (Macadam and Shiskin). In malignant disease high figures have been reported by Luden,[13] but the results of Brunton and of Maxwell in such cases were variable. In myxœdema, and still more in subacute parenchymatous nephritis, there is an increase in the blood cholesterol (Gardner and Gainsborough).[14]

In 18 cases with a blood cholesterol content less than 0·13 per cent., which Macadam and Shiskin held was the lowest normal limit, they found that 16 died of pyelonephritis after prostatectomy and two recovered. Maxwell had ten cases where the blood cholesterol was below 0·13 per cent., and three of them died of infection, and one of uræmia, while of 16 cases with a normal cholesterol content four died of infection and one of uræmia. Dr. R. D. Lawrence has carried out the test for me in a variety of diseases of the urinary organs. Among these there were 50 cases where the prostate was removed by suprapubic prostatectomy. There were ten cases where the cholesterol content of the blood was 0·13 g. per cent. or under. Of these, four died from the effects of sepsis (40 per cent.). On the other hand, there were a number of cases where the cholesterol content of the blood was within the normal figures, and epididymitis developed or the cystotomy wound healed slowly on account of sepsis. The average figure of the cholesterol content of the blood in seven cases where epididymitis followed prostatectomy was 0·129 g. per cent. In this group there was one case where the figure was 0·286 g. per cent., and another with a cholesterol content of 0·077 g. per 100 c.cm. The average cholesterol content of the blood in four cases of pyelitis and pyelonephritis following prostatectomy was 0·134 g. per cent. Rapid healing of the cystotomy wound followed operation in 15 cases, with an average cholesterol content of the blood of 0·17 g. per cent.; slow healing from sepsis in nine cases with an average cholesterol content of 0·141 g. per cent.

It would seem, therefore, that on the average the cholesterol tends to run in high figures where rapid healing takes place, and in low figures where the healing is delayed by sepsis. But there are individual cases that completely upset the clinical application of these figures. The question that the surgeon has to face in regard to such a test is, can he make the important decision as to whether an operation should or should not be performed from the figure of the cholesterol content of the blood? My view is that he cannot do so at the present time, and much careful work is required before this test of the resistance to sepsis is brought up to the level of reliability that the urea content of the blood or the urea-concentration tests have reached in relation to renal efficiency.

Circulatory Risks.

A large proportion of the patients that are submitted to prostatectomy show signs of arterio-sclerosis, a few have valvular disease, and some have impairment of the myocardium. The degree of circulatory strain that is permissible in any given case will be decided by the physician and the anæsthetist. Some of the cases in this series run very grave circulatory risks from the condition of the heart, as well as from the state of the blood pressure. Here I will merely make some general remarks on the surgical aspect of high and low blood pressure in prostatectomy.

The first point is that a large number of the patients submitted to prostatectomy have a low blood pressure, and a considerable number have a very low pressure. Thus in 107 consecutive cases 44, or 41·1 per cent., had a systolic pressure of 140 mm. of mercury or under, and 19, or 17·7 per cent., had a systolic pressure of 120 or under. This is contrary to what one would expect, for the average age of these patients was 67 years. It is certainly against the view held by some that senile enlargement of the prostate is always accompanied by arterio-sclerosis. If we look at the other end of the scale there were a number of cases where the systolic blood pressure was very high. In 15 the pressure was 200 and over, and it rose to 230 in two, 250 in two, and 260 in one case. In 24 (22·4 per cent.) the pressure was over 180.

With a very high blood pressure one would expect a large number of cases of serious hæmorrhage, yet in 15 cases with a systolic pressure of over 200 there were only two cases (13·3 per cent.) of severe post-operative hæmorrhage, and no cases in which the hæmorrhage at the time of the operation was serious. In the low grade pressures of 120 or under there was more severe hæmorrhage—namely, four cases of severe hæmorrhage at the time of operation (21·0 per cent.), and two cases of post-operative hæmorrhage (10·5 per cent.). Thus, taking all the cases of hæmorrhage, there were six in 19 (31·5 per cent.) at a pressure of 120 or under, and two in 15 (13·3 per cent.) at a pressure of 200 or over. In none of these cases did hæmorrhage decide a fatal issue. The occurrence of thrombosis in a proportion of cases of very low blood pressure, where the patient is immobilised in bed for a period of time, seems almost inevitable. When a septic focus lies in close relation to and practically in direct communication with a large plexus of veins, such as the prostatic plexus, clotting becomes almost a certainty.

Examined in this light we find that the lower the blood pressure the greater the probability of thrombosis and of pulmonary embolism. In 19 cases where the blood pressure was 120 and under there were three cases of thrombosis of pelvic or cerebral veins, and two cases of pulmonary embolism (26·3 per cent.), while in the remaining 88 cases of the blood pressure

series there were only two cases of thrombosis (2·2 per cent.). Only one case in the whole series died of sudden cardiac failure (systolic pressure 200).

My experience in regard to the various grades of blood pressure leads me to fear the low blood pressure patient on account of the danger of thrombosis and pulmonary embolism. The death-rate from pulmonary embolism is a serious one, and there are numerous cases of smaller emboli that recover. In the prevention of pulmonary embolism the prevention and treatment of sepsis has the first place, and next come measures which have for their object the prevention of stagnation in the pelvic veins. So far as is compatible with safety from hæmorrhage, patients with low blood pressure are kept on stimulants. They are encouraged to move the limbs and gentle massage is given. Deep breathing exercises are practised daily. The prevention of coagulation by means of citrates or other drugs is of doubtful value.

Mental and Nervous Disease.

A mild delirium becoming more evident at night and some mental confusion is not very uncommon in patients in the advanced stages of prostatic obstruction from enlargement of the prostate gland. The condition is partly due to uræmia and partly due to loss of sleep and rest from constant bladder irritation. Where adequate preliminary treatment by drainage, diuresis, and diet is carried out these patients usually do well after the operation of prostatectomy. In some cases the delirium reappears and becomes more active and the patient more and more difficult to nurse and control, food is refused, and there is great restlessness and desire to get out of bed; occasionally the patient becomes violent and difficult to restrain. These patients frequently become exhausted from their struggles, and from want of nourishment and fluids, and die. Suprapubic cystotomy is probably the best treatment for them and prostatectomy should be deferred sometimes for several months. Such cases are not confined to prostatectomy, although the factors that produce the condition are frequently combined in the cases in which prostatectomy is performed—namely, the presence of a mild chronic toxæmia in an old and rather feeble subject.

Another type of post-operative delirium amounting almost to mania occurs without preoperative warning and without the presence of toxæmia. Here the patient becomes quite uncontrollable after the operation, sedatives having little, or at least short-lived, effect. The condition may settle down after a few days when the patient is exhausted and heavily drugged. Such patients often die of some intercurrent complication.

Another type is met with where a patient suffering from increasing mental irritation and confusion has the symptoms of enlargement of the prostate with an adequate renal function and no urinary infection. The prostate is regarded as a source of irritation and its removal suggested. I have operated on two such cases without in any way improving the condition of the patients, who gradually sank and died some weeks after the prostatectomy.

Disease of the Spinal Cord.

It would seem an easy matter to distinguish between the bladder atony of disease of the spinal cord and the obstruction of an enlarged prostate, yet mistakes do sometimes occur in cases of early or arrested tabes dorsalis. Cases of disease of the spinal cord are not infrequently met with when the most prominent group of symptoms are those relating to the bladder. In such cases careful examination will usually reveal some symptom that points to nervous disease. All doubtful cases should be submitted to the neurologist for investigation.

There is another group of cases that give rise to difficulty in diagnosis. These I have described as "atony of the bladder without obstruction or symptoms of nervous disease." Such cases of idiopathic atony are now fully recognised. The diagnosis is difficult and necessitates the exclusion of early disease of the spinal cord and of minor changes in the prostate at the neck of the bladder. For fuller information in regard to these cases I would refer those interested to my original article[15] and to an exhaustive article by Braasch.[16]

The patient who suffers from tabes dorsalis may develop enlargement of the prostate gland. It is a matter of some difficulty to estimate whether the residual urine is due to obstruction or to atony. The bladder symptoms may be due to the enlarged prostate and the bladder, relieved of the obstruction by prostatectomy, may resume its normal function; on the other hand, the removal of the prostate may leave the patient with an atonic bladder due to the disease of the cord and a urethra through which it is difficult to pass a catheter. The diagnosis between prostatic obstruction and nerve atony of the bladder in a case of tabes dorsalis will rest upon the following points.

(1) Absence of or diminished desire for micturition.
(2) Impairment of sensation in the prostatic urethra.
(3) Spasmodic contraction of the compressor urethræ.
(4) Relaxation of the internal meatus from atony of the internal sphincter seen by cystoscope and urethroscope.
(5) Fine trabeculation and sacculation of the bladder wall on cystoscopy.
(6) General sacculation of the bladder wall and funnel-shaped bladder neck and prostatic urethra on cystography.

I have operated on three cases of enlargement of the prostatic gland in patients suffering from tabes dorsalis, and have been fortunate in each case in obtaining as good a result as if the nervous system were normal.

Glycosuria.

Prostatectomy has shared with other operations the benefit of modern progress in medicine, and glycosuria, which at one time was regarded as a contra-indication to prostatectomy, is now only a cause of delay. Diabetes is a disease of a rather earlier period of life than enlargement of the prostate and the point has been discussed whether senile glycosuria is the same as ordinary diabetes. Graham[17] and Lawrence[18] consider that the two conditions are identical, but MacLean[19] inclines to the view that there is some unproved but essential difference between the two types. So far as prostatectomy is concerned, no distinction can be drawn. The evil effects of diabetes are particularly dangerous in the subject of enlarged prostate who undergoes prostatectomy. The two dangers are coma and infection and sloughing of the wound with delay in healing, and the latter may be the cause of death from chronic sepsis many weeks after the operation. Before the introduction of insulin it was occasionally possible to obtain a successful result from prostatectomy in a case of glycosuria, and I have treated two striking examples. I have notes of 16 cases of glycosuria on which I performed prostatectomy. Of these, 12 (75 per cent.) recovered from the operation and four died (25 per cent.). Of the four fatal cases, two died of diabetic coma within three days of the operation. These cases were operated before the modern advance in the treatment of diabetes was made. One patient died of pyelonephritis 21 days after, and the other of pneumonia on the thirty-second day after operation. The wound in this case healed rapidly, the bladder being closed on the twenty-third day. Of the 12 cases that recovered, six healed rapidly and four healed slowly. The rapidly healing cases were those that were treated by modern methods; only two of these healed slowly. The reduced resistance to bacterial invasion in these diabetic cases was shown not only by the delay in healing in some of the cases but also by the liability to septic complications such as cystitis, pyelitis, pyelonephritis, and epididymitis. Further, if sepsis became established, it appeared more difficult to overcome in these diabetic cases than in the average non-diabetic patient. The difference in the safety with which operation can be undertaken and the rapidity with which the wounds

heal in cases of glycosuria treated under modern conditions compared with those operated before insulin was introduced is very striking. It is perhaps too much to say that under modern treatment cases of glycosuria cause no more anxiety than the average case of prostatectomy, but it is safe to state that from being almost a complete contra-indication to prostatectomy, glycosuria now only delays the operation and somewhat increases the risks.

Time for Operation.

It is generally accepted that the best form of treatment for the adenomatous prostate is removal by operation if no contra-indication exists in the urinary organs or other systems of the body. In the majority of cases seen by the surgeon no doubt will arise as to the necessity for operation. But where the prostate is moderately enlarged, and the symptoms are not severely disabling and the residual urine at no time exceeds 2 ounces and is sterile, the problem is a more difficult one. Is it wise to allow these cases to go on indefinitely or should the surgeon insist that operation should be done here as well as in the cases where the prostate is large and the residual urine abundant? Wherein lies the necessity for early operation? Does the growth of a prostate once definitely enlarged ever become arrested? My experience is that while the prostate may in some cases remain in a state of moderate enlargement for a number of years (five or six) without any appreciable increase in the size or the amount of obstruction as measured by the quantity of residual urine, the gland eventually enters on a period of more rapid enlargement with rapidly increasing residual urine. An accident such as a chill, holding the water too long, dietetic indiscretion, or fatigue, may precipitate the second stage by producing acute retention, after which the residual urine becomes permanently and progressively increased. But while the prostate may in its earlier stages remain apparently stationary for some years, the patient is growing older. What influence has the age factor on the seriousness of the operation of prostatectomy should it eventually become necessary? It is the experience of all urinary surgeons that the operation can be successfully performed in extreme old age. Freyer relates that in 1625 cases of prostatectomy he had operated on 92 octogenarians between 80 and 90 years, and 13 bordering on this age in their eightieth year with 12 deaths (11½ per cent.). This is a fine record of work, but the mortality here is twice that of his total average. In my own cases there were 27 patients of 80 years or over with three deaths, a death-rate of 11·11 per cent., which closely corresponds to Freyer's figures. Very constant skilled attention is necessary in these old men after operation. They may pass safely through an uncomplicated convalescence, but they have little chance of surviving an attack of bronchitis, an exacerbation of sepsis, or a severe hæmorrhage. In spite of the surprisingly moderate death-rate of prostatectomy in patients over 80 years, we cannot be indifferent to advancing age as an argument in favour of prostatectomy early rather than late.

Another point in favour of early operation is the "silent" prostate with chronic urinary retention. These cases are among the most difficult and dangerous to treat in prostatic surgery. The only way to prevent the development of so grave a complication is to examine thoroughly all cases of frequent micturition in old men and keep them under observation. If residual urine is found, operation should be recommended. Two further reasons why operation on an enlarged prostate should not be indefinitely delayed are the danger of sepsis and of malignant changes in a prostate which is the seat of simple enlargement.

Drainage of the Bladder.

Many of the complications of enlarged prostate that contra-indicate immediate prostatectomy and necessitate a period of preliminary treatment are of a purely medical nature. There are two groups of complications, however, that call for surgical treatment—namely, chronic retention of urine with consequent uræmia, and urinary sepsis. The treatment of these conditions leads to the discussion of preliminary drainage of the bladder either by catheter or by cystotomy. I shall consider the question in relation to four types of case commonly met with in practice.

(1) Chronic retention with symptoms of renal inefficiency.
(2) Severe urinary sepsis.
(3) Serious extra-urinary complications.
(4) Cases without serious back pressure or sepsis or extra-urinary complications.

1. *Cases of Chronic Retention with Symptoms of Renal Inefficiency.*—The danger of suddenly emptying a bladder containing a large quantity of residual urine in a patient suffering from enlarged prostate is universally recognised. The question that arises is what is the best method of emptying the chronically over-distended bladder? There are two methods—namely, the indwelling catheter and suprapubic cystotomy. The advantages of the resident catheter are that the fluid in the distended bladder can be withdrawn very slowly in measured quantities, that the suprapubic area, the field of the future prostatectomy incision, is untouched, that asepsis is more easily maintained, that the method is a much less severe one in debilitated and uræmic patients, and that only one cutting operation is performed. Suprapubic cystotomy is followed immediately by a rise in the blood-urea, whereas the tying-in of the catheter is not. The following two cases are extreme examples, but they serve to illustrate this difference between catheter drainage and suprapubic cystotomy.

Case 1.	Case 2.
Chronic retention.	Chronic retention.
No symptoms of uræmia.	Mild symptoms of uræmia.
Urea concentration 1·03 %.	Urea concentration 1·05 %.
Blood-urea 50 mg.*	Blood-urea 60 mg.*
Cystotomy.	Catheter drainage 14 days.
6th day: blood-urea 119 mg.*	14th day: urea concentration 1·4 %. Blood-urea 47 mg.*
8th „ „ 164 mg.*	Prostatectomy.
10th „ died, uræmia.	15th day after operation, wound dry.
	18th day after operation, home.

* Per 100 c.cm.

At the end of 10 or 14 days' continuous drainage the decision about prostatectomy will have to be made. If the renal function is satisfactory, and the general condition is good, it may be done, otherwise more prolonged drainage is necessary. If this drainage has been by indwelling catheter cystotomy will now be required, and will be maintained until the condition of the renal function is satisfactory. In 80 per cent. of cases where there is chronic retention, and signs of uræmia are present, the renal function has returned to normal or improved sufficiently for prostatectomy to be safe at the end of ten days' catheter drainage.

2. *Cases of Enlarged Prostate and Serious Urinary Sepsis.*—Drainage of the bladder is imperative before the prostate is removed. In such cases the retained urethral catheter is worthless, for the lumen is much too small to allow the free discharge of purulent urine. The only really effective method is suprapubic cystotomy, and the introduction of a large open tube. A catheter is tied in the urethra, and continuous irrigation is installed.

3. *Cases of Chronic Retention with Enlarged Prostate* where the patient suffers from a serious complication, such as severe bronchitis or pneumonia, and in which catheter drainage is difficult and suprapubic drainage is preferable.

4. *Cases with Enlarged Prostate Without Chronic Retention of Urine or Serious Urinary Sepsis.*

It has been the custom with some surgeons, especially in France and America, to divide the operation of suprapubic prostatectomy into two stages in all cases, and the two-stage operation has been

adopted in some surgical centres in this country. The advantages claimed for the two-stage operation are that there is less shock, less hæmorrhage, and less sepsis, and that the back pressure on the kidneys is relieved. In the ordinary straightforward case the two-stage operation does not appear to me to be safer than the one-stage operation. Shock is not a factor in uncomplicated one-stage prostatectomy. My experience has been that the second stage of a two-stage prostatectomy is much more likely to produce shock than a single-stage operation. If the open operation is performed where cystotomy has been previously done it becomes necessary to dissect away the whole of the scar tissue and to mobilise the bladder. The operation is, therefore, much more serious than a single-stage one. Hæmorrhage is not less in a two-stage than in a one-stage operation. There is no question of sepsis being reduced in the cases now under discussion, for the bladder is aseptic. In the two-stage prostatectomy the bladder practically always becomes infected during the period of drainage before the prostatectomy. If one accepts infection as a necessary sequel to prostatectomy, the two-stage operation has the advantage that the preliminary stage of infection is passed through before the prostate is removed, and possibly some degree of immunity to sepsis may develop before the second operation. This is certainly a great advantage in hospital work where the post-operative treatment cannot be closely supervised by the surgeon or by permanent assistants. An important disadvantage in the two-stage operation is that there are two operations and two anæsthetics, and that the total period during which the patient remains in bed is longer.

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RADIUM FOR JERSEY.—A public subscription, which has yielded £2611, plus interest, has been raised in Jersey in thanksgiving for the King's recovery. The money has been made over to the States (the Parliament of the island) for the purchase of radium and the creation of a radium clinic. The radium is to be kept at the General Hospital, and is to be available for issue to all practitioners in the island under regulations to be drawn up by the States General Hospital committee.

COÖPTED HOSPITAL REPRESENTATIVES.—The constitution of the public assistance committee of the Warwickshire County Council does not permit of the coöption of persons who are not members of the council. The executive committee of the Rugby Association of Hospital Contributors has decided to protest against this arrangement on the ground that the Hospital of St. Cross in that town, which serves a population of 40,000, ought to be represented on the committee, especially in view of the committee's statutory power to coöpt up to one-third of its number. The protest is to be sent to the Minister of Health, and other voluntary hospitals are to be asked to join in it.

THE TREATMENT OF CHRONIC ENCEPHALITIC PARKINSONISM WITH DRIED PREPARATIONS OF STRAMONIUM.

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IN the investigation of different forms of treatment likely to benefit chronic encephalitic parkinsonism, it soon becomes apparent that no actual curative effect is possible. The symptoms and signs presented result almost entirely from neuronal destruction, and although it is possible that in some cases the severity of the condition may be increased by toxic depression of neurones owing to the presence of an active infection in the brain, there is little doubt that the progressive changes exhibited by most chronic cases are due to the destructive effects of such an active infective process. In these cases the attempt to find some means of eradicating the chronically active infection is logical, but even if such a method were forthcoming the most that could be expected would be that the progressive changes were arrested or that the risk of acute recurrences was removed. The treatment of the parkinsonian syndrome, therefore, resolves itself into what is essentially palliative treatment under which the patient has permanently to remain to avoid relapse.

Palliative Treatment of Chronic Encephalitic Parkinsonism with the Atropine Group of Alkaloids.

In 1906 Erb [1] recorded the value of hyoscine as a specific palliative in the treatment of idiopathic paralysis agitans. Owing to the close clinical similarity between this disease and chronic encephalitic parkinsonism, it is natural that hyoscine and its related alkaloids were early tried in the latter condition. In 1921 Babinski and Souques [2] drew attention to the value of hyoscine in encephalitic parkinsonism, and this observation soon received general confirmation. Other alkaloids related to hyoscine were also found to exert similar beneficial effects in varying degrees, and the application of this class of drugs has since become the established treatment. It was found that the muscular rigidity diminished, tremor lessened, sialorrhœa reduced, and that the patients became less helpless and more active in movement. These beneficial effects, however, speedily disappeared if the drug was omitted. Hyoscine hydrobromide appeared the most effective, and is now the substance most generally used. It is administered orally or hypodermically, but the benefit conferred is much greater when it is given by the latter route. It has been our object in the work recorded in this communication to find a palliative treatment of chronic encephalitic parkinsonism that is equally or more effective than the hypodermic administration of hyoscine but in which the drug can be given by the mouth so that patients may receive the maximum benefit without admission to hospital, or the irksome routine of at least three hypodermic injections daily. At the stage to which the investigation has now progressed, it has been found that this result is best obtained by the use of dry preparations, and particularly the dried extract of stramonium in suitable doses.

Treatment with Stramonium.

In 1925 Juster [3] described the value of stramonium in diminishing parkinsonian rigidity, and in 1926 Laignal-Levastine and Valance [4] reported the results of a year's treatment with stramonium in 24 cases of parkinsonism. These observers found in their cases amelioration of the muscular rigidity, bradykinesia, salivation, and tremor, and the state of mental inertia—bradyphrenia—was improved. Other favourable reports on treatment with stramonium were made in 1928 by Shapiro [5] and in the same year by Carmichael and Green.[6] The latter observers used tincture of stramonium, B.P., in doses which they succeeded in raising to 90 minims three times a day, and they stated that the optimum dose was 45 to 60 minims by the mouth. Carmichael and Green's conclusion, which we are unable to confirm, was that tincture of stramonium in these doses was quite as effective in palliating parkinsonism as hyoscine administered hypodermically. In 1928 Shapiro [5] also reported on the effects of stramonium given by Juster's method—viz., the oral administration of the powdered dried leaves of *Datura stramonium*. The dried leaves were first given in doses of gr. 1 three times a day, and this dose was rapidly increased until grs. 14–16 were being taken daily. When the optimum effect was reached the dose was diminished until grs. 7–8 were given daily. Of the 23 cases treated without ill-effects 16 were suffering from encephalitic parkinsonism and 7 from senile paralysis agitans. The results in 14 cases (11 of encephalitic parkinsonism and three of paralysis agitans) were reported as excellent. In the remaining nine cases improvement was slow. The degree of benefit was greater in the encephalitic patients than in those suffering from paralysis agitans, a result that we can fully confirm. Muscular rigidity, speech, gait, sialorrhœa, and mental condition were all favourably influenced. Occasionally slight diarrhœa and some mydriasis occurred but were satisfactorily relieved by omitting the drug for a day or two. Finally, in 1929, Jacobsen and Epplen [7] commented upon the action of tincture of stramonium, U.S.P., and summarised the treatment of parkinsonism with stramonium.

Personal Experiments with Stramonium.

1. *Tincture of Stramonium.*—Six typical cases of chronic encephalitic parkinsonism were treated, originally with tincture of stramonium, B.P., given three times a day. The patients began with doses of 20–30 minims, t.d.s., and these were rapidly increased to 90–120 minims, t.d.s., that is, up to as much as eight times the maximum pharmacopœial dose. Definite improvement resulted in the muscular rigidity and bradykinesia in all cases, and the result was distinctly better than that obtained from hyoscine gr. 1/200–1/100 t.d.s., given by the mouth in tablet form. The benefit from tincture of stramonium in the doses mentioned, however, was not nearly so great as that resulting from gr. 1/200–1/100 of hyoscine given hypodermically. The patients continued treatment with the stramonium tincture over a period of two years and at no time were any signs of intolerance exhibited.

2. *Dried Stramonium Leaves.*—A series of 12 cases, all of whom had previously been under the hypodermic hyoscine, were then treated by Juster's method with the exception that his recommendations as to dosage were not strictly followed. The dried leaves of *Datura stramonium* were given in capsules or pills three times a day, the initial dose being either 0·1 or 0·2 g. t.d.s. This dose was found to be too small to produce benefit and was therefore increased by the addition of 0·1 g. to each dose until the patients were receiving 1·2 to 1·6 g. three times a day. At this point some of the cases showed intolerance in the form of mild delirium of short duration. Nevertheless, this level of dosage was maintained for three months, and during that period the condition of the 12 patients was equal, and in some instances superior, to that previously produced in the same patients by the hypodermic administration of hyoscine in maximum doses—i.e., the highest doses that could be tolerated being in no case less than gr. 1/100 t.d.s.

All the cases treated were classified as severe. When not under treatment they were all quite helpless, exhibiting pronounced generalised parkinsonian rigidity and, in most instances, inability to stand or walk, to feed themselves, or to dress and undress. All showed much limitation and indistinctness of speech and excessive salivation. Striatal tremors and greasy skins were common. During the period of treatment with maximum doses of dried stramonium leaves their muscular rigidity was much reduced, often practically abolished. They were able to stand and also to walk; in fact, in most cases walking became quite free. The general bradykinesia and helplessness was much diminished and all patients could feed themselves, talk well, dress, and undress. Nine became fully capable of looking after themselves and of doing a considerable amount of work, such as sweeping and tidying the wards. Several appeared almost physically normal. Bradyphrenia was much improved, sialorrhœa abolished, and tremor somewhat diminished. We estimated that the clinical effect, as regards benefit, of 1 g. of dried stramonium leaves was approximately equal to that produced by gr. 1/100 of hyoscine hydrobromide given hypodermically.

3. *Dried Extract of Stramonium.*—The dried stramonium leaves were given in capsules and pills, and also in powder form. In the larger doses reached, however, the amount required became unreasonably bulky; consequently a dried preparation of stramonium leaves containing a higher percentage of total alkaloids was given, so that a proportionately smaller dose would produce the same effects. The preparation was the extractum stramonii of the United States Pharmacopœia, which is manufactured from the dried leaves by percolation with alcohol, evaporation of the percolate to a pilular consistence, and adjustment of the strength so that the extract contains 1 per cent. of total alkaloids. The alkaloidal content of dried stramonium leaves varies from 0·1 to 0·7 per cent., the average being 0·25 per cent.; the dried extract, therefore, was approximately four times as strong as the dried leaves. Extractum stramonii, U.S.P., was preferred to the B.P.C. extract, as the latter is a coarser powder and is said to be more deliquescent.

The 12 patients under treatment with dried stramonium leaves were then transferred to treatment with extractum stramonii, U.S.P., the doses administered being one-quarter by weight of those of the dried leaves. Thus the initial doses with the extract of stramonium were 0·25 to 0·375 g., three times a day by the mouth. The transference was made at once in all cases, and the smaller bulk of the extract was found to be far more acceptable than the larger one of dried leaves. The substitution proved to be perfect, the great improvement in the condition of each patient being fully maintained.

Dried stramonium leaves in doses of 1 g. t.d.s. produced a clinical effect equal to that of maximum doses of hyoscine given hypodermically three times a day. The average maximum dose of the latter in the 12 patients was gr. 1/100 t.d.s. Thus it was concluded that, as regards clinical effect, the potency of gr. 1/100 hyoscine was approximately equal to 1 g. of dried stramonium leaves, and, therefore, to 0·25 g. of extract of stramonium. A series of 53 cases of encephalitic parkinsonism under treatment with hyoscine gr. 1/200 to gr. 1/100 hypodermically three times a day were then transferred directly to treatment with extract of stramonium, U.S.P., in the calculated equivalent doses. In severe cases it was found that if the hyoscine were suddenly omitted the patients rapidly relapsed into a state of helplessness and had difficulty in swallowing the stramonium extract. In addition, in some cases, the absorption of the stramonium extract and the conse-

quent exertion of its full effect was slower than the elimination of the hyoscine, with the result that the patient relapsed. To avoid this, therefore, the substitution was carried out in stages. Each dose of hyoscine was reduced by gr. 1/200 and 0·125 g. of stramonium extract given instead. A day or two later a further gr. 1/200 of hyoscine was replaced by the equivalent amount of stramonium (0·125 g.). Consequently the patient was then receiving 0·25 g. of stramonium extract instead of gr. 1/100 of hyoscine. This was continued until complete substitution had taken place. In some cases it was found necessary to carry out the substitution even more slowly.

Case Results.

This series of 53 cases, together with the 12 cases originally treated with dried stramonium leaves as described above and, in addition, with 15 further cases who were receiving hyoscine by mouth as out-patients, making a total of 80 cases, have now been treated with extractum stramonii, U.S.P. The ages of the patients range between 12 and 40 years, the majority being over 16. The 80 cases have continued on the extract for the past six months and all the patients that had previously been receiving maximum doses of hyoscine hypodermically have remained quite as well as they were on the latter and in many instances are even improved. It was found possible quite rapidly to increase the amounts of extractum stramonii that were given at first, and at the present time the average dose in a moderately severe case of generalised parkinsonism is 0·75 g. three times a day by the mouth. Many of the patients are in a satisfactory condition on 0·5 g. three times a day, while one or two cases are receiving doses of more than 1 g., the largest being 1·375 g. three times a day. The case on the latter dose is an extremely severe one; he has been utterly helpless for over four years, with greatly impaired speech, inability to feed or dress himself, to stand or to walk, and with much bradyphrenia. On the heavy dosage mentioned he can walk slowly by himself, can talk well, feed himself, and is much brighter mentally. His case illustrates the increase in tolerance of the atropine group of alkaloids that is associated with parkinsonism; the greater the severity of the syndrome the greater the tolerance. In this series of 80 cases the improvement is present in all features of the syndrome. It occurred to the same degree in the original series of 12 cases—i.e., most of the patients previously helpless become able fully to look after themselves, capable of much physical work and activity, and mentally brighter. Muscular rigidity is the symptom most relieved and in many cases is totally abolished; sialorrhœa and greasiness of the skin also disappear. Bradykinesia and bradyphrenia are much ameliorated; tremor, although not abolished, is mitigated; speech is fluent and comparatively easy; standing and walking are not only possible and almost normal in many cases, but the extreme flexion of limbs, trunk, and neck is considerably diminished in most of the patients. The improvement is such that many cases are able to look after themselves quite satisfactorily in the outside world, although probably few of them would be capable of earning their living. We have tried the stramonium extract in several cases of idiopathic paralysis agitans, but we find the relief of symptoms and especially of tremor is considerably less than in encephalitic parkinsonism.

The Relative Failure of the Tincture.

Having obtained such satisfactory results with dried preparations of stramonium, it was interesting to inquire why tincture of stramonium was less successful. It has been stated above that extractum stramonii, U.S.P., is prepared from the dried leaves and standardised to contain 1 per cent. of total alkaloids. Tinctura stramonii, B.P., is also made from the dried leaves by percolation with alcohol in a similar manner to the extract. Thus, the tincture should contain the same alkaloids and any other constituents as the extract, and should be capable of producing identical pharmacological effects. It was found, however, after calculation, that the average content of total alkaloids in the tincture was only 0·05 per cent. Thus tinctura stramonii, B.P., is 20 times weaker than extractum stramonii, U.S.P. To prove this conclusion clinically, several patients who were being treated with dried preparations of stramonium had an equivalent amount of tincture substituted. Patients receiving 0·25 g. of extractum stramonii, t.d.s., had this withdrawn and were given tinctura stramonii, B.P., ℥ iii. t.d.s., instead. Their condition remained exactly the same as when receiving the extract. When the dosage of tincture was appreciably reduced the patients relapsed and when it was appreciably increased they showed signs of intolerance similar to those exhibited when their dosage of extract was increased. The theoretical calculation of equivalent doses was therefore borne out in practice. Similar substitution was successfully carried out in cases receiving hyoscine and dried leaves on the basis of the equations: hyoscine gr. 1/100 = dried stramonium leaves 1 g., extractum stramonii, U.S.P., 0·25 g. = tinctura stramonii, B.P., ℥ iii. Other workers with tinctura stramonii have not reported the employment of such large doses, and the small benefit that we obtained from exhibiting the doses that they recommended is explained by the fact that, on the basis of the above experiments, they were administering doses that were much too small.

We find that extractum stramonii, U.S.P., is preferable to tinctura stramonii, B.P., because, firstly, the administration of adequate doses of the tincture entails the daily consumption of a certain amount of alcohol, and, secondly, the tincture is twice as expensive as the extract. Extractum stramonii exsiccatum, B.P.C., is of exactly the same strength as the U.S.P. extract, but is a coarser powder and is said to be more deliquescent. We have tested it in several cases, however, and find that it produces the same clinical benefit as the U.S.P. extract; it can be used, therefore, in the same doses as the latter.

No deleterious effects result from the prolonged administration of stramonium nor, indeed, from any of the atropine group of alkaloids and there is no cumulative action. Owing to the exceptional tolerance of these alkaloids shown by parkinsonian cases, overdosage is not easy to produce and is rarely serious. Acquired increase of tolerance occurs, but its development is slow and a patient normally persists for many months in a satisfactory condition on doses such as those mentioned above. Two principles in the palliative treatment of parkinsonism are important: (1) the maximum dosage should rapidly be found, and (2) the dosage should be maintained continuously for the rest of the patient's life.

Pharmacological Action of the Atropine Group of Alkaloids.

The mode of action of the atropine group of alkaloids in specifically ameliorating parkinsonism is somewhat obscure. Is the action central or peripheral? These substances are known to act peripherally on the parasympathetic nervous system, giving rise, for example, to paralysis of the nerve-endings of the secretory fibres to the salivary glands, of the fibres to the sphincter pupillæ and of the vagus nerve. Also, they depress the nerve-endings of the secretory fibres to the sweat glands throughout the body and, as most authorities agree that these fibres originate from the sympathetic nervous system rather than from the parasympathetic, this action would suggest some effect upon sympathetic nerve-endings. In experimental animals there is evidence of slight depression of ordinary sensory and motor nerves. Consequently, it may be said that this group of alkaloids tends to paralyse all nerve-endings, the effect being most marked upon those of the parasympathetic system.

These alkaloids are also known to act centrally, atropine producing general cerebral stimulation with a

subsequent depression, which is evident after large doses, when drowsiness and coma may supervene. Hyoscine produces a very short period of cerebral stimulation and the stage of depression is more pronounced. The action of hyoscine on nerve-endings is more powerful but passes off sooner than that of atropine. Hyoscyamine is isomeric with atropine, which is optically inactive and composed of equal quantities of lævo- and dextro-rotatory hyoscyamine. As the latter substance is said to be comparatively inactive, the effects of atropine are due to lævo-rotatory hyoscyamine. Thus, a given weight of atropine is only half as active as the same amount of hyoscyamine. The degrees of central action of the three alkaloids are grouped as follows:—

—	Atropine.	Hyoscyamine.	Hyoscine.
Stimulation ..	Marked.	Moderate.	Slight.
Depression ..	Slight.	„	Marked.

Theoretically, hyoscyamine (that used in medicine being the pure lævo-rotatory form) should be twice as stimulant to the central nervous systems, as atropine, yet it is given as being less stimulant. If this is so, it may be possible that much of the deliriant action of the atropine is due to the 50 per. cent of dextro-hyoscyamine contained in it. The latter is a stimulant to the central nervous system in animals. *Datura stramonium* is said to contain chiefly hyoscyamine together with a little atropine and hyoscine; its action, therefore, should be mainly that of hyoscyamine. It has been suggested, however, that *Datura stramonium* contains unknown alkaloids which may modify its action. Degrees of benefit in parkinsonism similar to those obtained from stramonium are not obtained from atropine or belladonna; our experience is that they are rather more toxic and less specific in their clinical effects.

According to the theory of dual innervation of muscle as elaborated by Hunter, postural muscle tone is said to be maintained by impulses passing down sympathetic nerve-fibres to skeletal muscles. On this hypothesis the tonic excess of muscle tone in parkinsonism, suggesting an excess of postural tone, is possibly diminished by a depressant action of the atropine group of alkaloids on sympathetic nerve-endings. The soundness of this theory, however, is in considerable doubt and there is sufficient clinical evidence to show that the action of these drugs is largely central. A number of the distinctive features of parkinsonism relieved by their use are certainly central in origin; for example, the bradyphrenia and the tremor. On the other hand, the diminution of sialorrhœa is almost certainly due to peripheral action. The difference in effectiveness of these drugs in encephalitic parkinsonism and in senile paralysis agitans is probably due to the fact that there are distant clinical differences in the two syndromes and that the pathological lesions are localised with the greatest intensity in the areas of the brain somewhat removed from one another. Thus in paralysis agitans the main incidence of neuronic degeneration is in the globus pallidus, while in encephalitic parkinsonism the destructive lesions are most extensive in the substantia nigra. Further, at the comparatively late age at which paralysis agitans occurs, there is probably less power of response on the part of the nervous system to the effect of the alkaloids than at the earlier age of most encephalitic cases.

"Positive" signs or symptoms in the nervous system, in Hughlings Jackson's sense, cannot be the immediate effects of a disease process producing structural loss. They must be due, if they are not the result of pathological irritation and stimulation of neurones, to a loss of inhibition by higher over lower centres. Thus in parkinsonism the hypertonus is probably due to destructive lesions involving an area of the brain of which the function is the inhibition of lower centres concerned with the central origination of postural muscle tone. It is suggested that the specific palliative effect of the atropine group of alkaloids on parkinsonian rigidity is due to a depression of those centres over which inhibition has been diminished by the disease process.[8] Cruchet demonstrated that hyoscine, whilst benefiting parkinsonian rigidity, had less effect on the bradykinesia. It is probable that muscular rigidity contributes only secondarily to general bradykinesia, which appears to be largely a negative sign in the Jacksonian sense. Thus the incomplete efficacy of the atropine group would be explained. The undoubted benefit in that state of instinctive and emotional depression in parkinsonism known as bradyphrenia is difficult to account for. Bradyphrenia is not present in paralysis agitans. It is possible that central disturbances of the autonomic nervous system (producing signs of thalamic depression) are the basis of the condition and that the action of the atropine group of alkaloids on this system may explain the beneficial effect. The blood calcium in bradyphrenia is abnormally low and the condition is usually associated with marked bradykinesia, the two conditions appearing to be related. Both are distinctly benefited by Collip's parathyroid extract when this is given hypodermically in addition to drugs of the atropine group.

Summary and Conclusions.

Results as satisfactory as those from hypodermic hyoscine are obtained by the administration of extractum stramonii, U.S.P., by the mouth in doses of 0·25 g. to 1 g. or more three times a day, the average dose being 0·75 g. Similar results are obtainable with doses containing equivalent quantities of alkaloid of extractum stramonii exsiccatum, B.P.C., dried stramonium leaves, and tinctura stramonii, B.P.

The disadvantage of dried stramonium leaves is the excessive bulk of adequate doses, and of tinctura stramonii that it is twice as expensive as the stramonium extract.

The equivalent therapeutic doses of the preparations are as follows: hyoscine gr. 1/100 (hypodermic) = dried stramonium leaves, 1 g. = extractum stramonii, U.S.P., 0·25 g. = extractum stramonii exsiccatum, B.P.C., 0·25 g. = tinctura stramonii, B.P., ℥iii.

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THE CANCER HOSPITAL, Brompton Road, S.W.—The annual report shows that last year 1162 patients were admitted, an increase of 189. There were 1557 new out-patients, and the 988 operations were an increase of 129. The electrotherapeutic department treated 177 new cases. Plans have been prepared for the new building which will cost £93,000; at present only £17,500 has been received. A larger supply of radium is badly needed.

CHEMIST'S CARE OF DRUGS.—At Brighton police-court on May 23rd a chemist was summoned for failing to keep drugs in a locked receptacle. A police officer found a cupboard containing morphia, cocaine, and tincture of opium in a cupboard in the shop, the padlock being broken. At the time of the officer's visit the chemist was out, and an unqualified assistant and an errand boy were in the shop and could have had access to the cupboard. A plea of guilty was entered on behalf of defendant, and it was stated that the padlock had worked properly on the day of the inspection by the officer, but before the officer entered it could not be opened and was forced. When the officer called the defendant had gone out to buy a new one. The justices, by a majority, fined the defendant £2.

CUTANEOUS PAPILLOMATA IN THE RAT FOLLOWING EXPOSURE TO ULTRA-VIOLET LIGHT.

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OF the theories which seek to explain the ætiology of cancer the only one which has received experimental proof is that which assigns the exciting rôle to chronic irritation. The forms of stimulation which are now known to cause cancer are, however, of a most diverse character, though the properties of the cancerous cell are similar in all cases. It therefore follows that whatever the forms of external stimulus, the metabolic changes in the tissues produced by these stimuli must of necessity be essentially similar. The nature of the metabolic changes set up by carcinogenic stimuli is, however, one of the essential points in connexion with cancer on which knowledge is still lacking, though work such as that of Lewis (1927) on the responses of the blood-vessels of the human skin to various forms of stimuli is highly suggestive of the type of investigation which must be carried out in order to throw light on this question.

In the meantime much can be learnt in regard to prophylaxis from a study of the external forms of stimulus which may give rise to cancer. Comparatively little attention has, however, been paid to the possibility of carcinogenic action by ultra-violet rays, though there is abundant clinical evidence to suggest that prolonged exposure to sunlight rich in ultra-violet light is a cause of skin cancer in man.

In certain parts of America, and more especially in Australia, there is a Northern European population exposed to prolonged and intense sunlight, with the result, as Molesworth (1927) points out, that rodent ulcer and epithelioma of the skin are far commoner in Australia than in Great Britain. In addition, white cattle in Australia are especially liable to develop epitheliomata. Drabble (1929), for instance, in New South Wales found 190 cases of skin cancer among 955,798 cattle slaughtered in four years. The colour incidence of the affected animals was of considerable interest, as in all cases the animals which were wholly or partly white showed evidence of chronic dermatitis on the unpigmented portions of the skin, and where malignant changes had occurred the areas of skin involved were also partly or wholly white except in three cases. In these three cases the growths had arisen from old brand-scars.

Of the 190 cases of epithelioma described, no less than 137, or 72·1 per cent. of the total, occurred in white or partly white cattle, and of the 30 roan-coloured cattle with skin cancer many were so lightly pigmented as to be approaching white. Only one black animal was affected.

Similar evidence is available from Queensland, where practical farmers have now abandoned the breeding of white cattle owing to their liability to develop cancer of the skin.

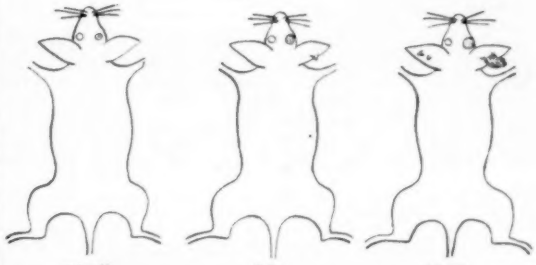
The parallelism with extreme liability to skin cancer of poorly pigmented persons, described by Molesworth from Australia, is very striking and strongly suggests that chronic dermatitis due to excessive exposure to sunlight rich in ultra-violet light plays a not unimportant part in the ætiology of skin cancer both in man and in cattle. Unfortunately, no particulars are available as to the length of time necessary to initiate these cancerous lesions in cattle. There is not wanting direct evidence to suggest that exposure to ultra-violet light from artificial sources may initiate precancerous and cancerous lesions in man. Colquhoun (1927) has reported a case of keratoses on the chest of a man treated with ultra-violet light, while Ferrari (1929) has recorded a skin tumour which developed after ultra-violet light treatment of an area of skin that had previously been the site of a radio-dermatitis.

Ultra-violet Light as a Cause of Skin Tumours in Rats.

In a previous communication (1928) I brought forward evidence to show that exposure to the rays of a mercury-vapour lamp is capable of exciting carcinomatous changes in the skin of the mouse, provided the exposures are continued for a period of at least eight months. Experiments have now been carried out to determine whether rats exposed to the mercury-vapour lamp are also liable to develop epitheliomata. Six albino rats, about six months old, were epilated with sodium sulphide on an area of the back and were exposed to the light of the mercury-vapour lamp at a distance of 18 inches for one minute three times a week.

The technical details of the lamp are similar to those reported in connexion with the experiments on mice. The rats were first exposed on Dec. 29th, 1927; 18 months later three rats were still alive and in apparently normal health. On July 25th, 1929, however, one of the two surviving rats was noticed to have a small greyish-white opacity on the cornea of the right eye. This opaque area gradually increased in size and at the same time the eyeball began to enlarge. On Sept. 6th, 1929, 616 days after the commencement of the experiment, a small papilloma was noticed on the dorsal surface of the right ear, and, though the exposures to ultra-violet light were abandoned, the papilloma grew rapidly into a large horny excrescence. About a month later, two tiny papillomata appeared on the dorsal surface of the left ear.

FIG. 1.



25.vii. 6.ix. 13.xi.

The development of multiple tumours in the rat following exposure to the mercury-vapour lamp.

Unfortunately the rat, which by this time was showing signs of senility, died on Nov. 13th, 1929, with bronchopneumonia. At the post-mortem the right eyeball was about three times the size of the left, while the cornea was uniformly opaque. The skin of the back, where epilation had been carried out, was entirely devoid of hair, although no depilatory had been used for some months; there was no evidence of tumour formation, the skin appearing smooth and atrophied. Microscopically the tumour on the right ear had all the appearances of a rapidly growing papilloma with cell-nest formation and much keratinisation; the cartilage of the ear was intact. The absence of infiltration and of metastases does not warrant a diagnosis of carcinoma in this case, although the rapid rate of growth, as shown in Fig. 1, strongly suggests that infiltration would have occurred had the animal lived. It is noticeable also that growth continued in the absence of further exposures to the mercury-vapour lamp. The right eye exhibited what may have been a sarcomatous condition of the conjunctiva but is more probably a chronic inflammatory lesion. The surface epithelium of the cornea was intact and of normal thickness at the periphery but had disappeared over the central part of the eye; the substantia propria was greatly thickened and consisted of a cellular fibrous tissue with mast cells and mitotic figures, while scattered throughout the tissue were numerous giant cells. Small capillary vessels were present throughout the growth. Sections stained for tubercle baciili by Ziehl-Neelsen's method and for bacteria by toluidin-blue and van Gieson did not show the presence of micro-organisms.

Although exposure to the rays of the mercury-vapour lamp is thus undoubtedly capable of initiating precancerous and cancerous changes in the skin of

the mouse and rat, the question remains as to whether the ultra-violet rays are alone responsible or whether the infra-red rays given out by the lamp may also play some part in causing the cells to become malignant. Experiments with suitable screens are in progress to determine this question, but exposure of mice to a 1000-watt radiant heat bulb (glass) for 12 months has up to the present failed to induce malignant lesions in any of the exposed mice, while experiments with a thermopile show that under the conditions of the experiment the rise in temperature caused by the mercury-vapour lamp is not greater than 5° C. It is thus obvious that the carcinogenic action of the light from the mercury-vapour lamp is not attributable to the heat rays. It has been suggested also that the irritant action of the sodium sulphide may, in association with the ultra-violet rays, be the cause of the malignant change. If this were so, the tumours should have arisen on the skin of the back rather than on the ears, which had never been treated with the depilatory.

FIG. 2.

Papilloma from right ear of rat (×9)—fixed formol saline, stained Weigert's hæmatoxylin and van Gieson.

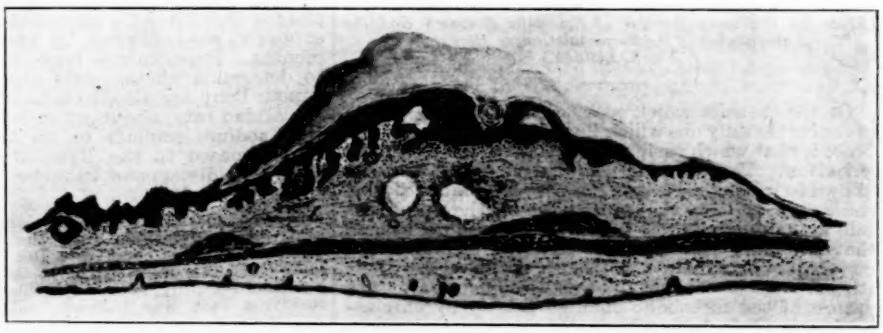
The lesion produced in the cornea is of considerable interest. While the irritant effects on the eye of a single long exposure to ultra-violet light have received considerable attention (W. S. and P. M. Duke-Elder, 1929), the effect of frequent short exposures has not been intensively studied. Although the time at which the corneal lesion began is suggestive of a neoplastic condition, nevertheless the general appearances are more suggestive of a chronic inflammatory reaction than of a new growth. The question of differentiating between chronic inflammation and sarcoma is, however, one of the greatest difficulty.

The Time Factor.

A further point of interest is the time required to produce neoplastic changes in the skin of the rat and mouse respectively. In the latter animal the minimal period of exposure is eight months, in the former 21 months. This great increase in the time necessary for the induction of tumours in the rat by the mercury-vapour lamp is comparable with the time necessary to produce cancer in the same animal by means of tar. In the mouse, as is well known, a minimum period of about four months' tar-painting is necessary to induce skin cancer; in the rat a much longer period is required, for Russell (1922 and 1923), who was the first to produce sarcomata in the rat by the injection of tar, found that in one rat 11½ months and in a second 18 months was the necessary time. Very few skin carcinomata have been produced in the rat by tar. Herly (1926), however, reported the occurrence of one such tumour, but unfortunately it is difficult to estimate the time necessary for the induction of this tumour, as after 226 days tarring was suspended, to be resumed after an interval of five months. In certain unpublished experiments initiated by the late Dr. B. R. G. Russell and continued by myself, in which tar was injected subcutaneously once a week into the right flank of rats, a sarcoma appeared in one rat after 20 months, a skin carcinoma in another after 19 months, and a malignant adenocarcinoma of the breast in a third after 20 months.

The period necessary for the induction by tar of sarcomata and carcinomata in the rat is thus obviously much longer than in the mouse. In man the time necessary to produce cancer of the skin by means of tar is from 10 to 15 years, while at least 15 years is required for cancers due to exposure to sunlight.

FIG. 3



Papilloma from left ear of rat (×18)—fixed formol saline, stained Weigert's hæmatoxylin and van Gieson.

It will be seen that the time necessary for the induction of malignant growth depends less on the irritant and the particular tissue involved than on the species of animal. The time necessary for the production of cancer thus increases with the length of life of the species.

Animal species.	Time necessary for the induction of papillomata and carcinomata with—	
	Tar.	Mercury-vapour lamp.
Mouse ..	4–6 months.	8–10 months.
Rat	19 ,,	21 ,,
	Shale oil.	Sunlight.
Man	10–15 years.	15–20 years.

Conclusions.

By exposure to a source of ultra-violet light rapidly growing skin papillomata have been produced in a rat, together with a chronic inflammatory reaction in the cornea. The period (21 months) necessary for the induction of these skin tumours in the rat is longer than that required in the mouse; the time necessary to produce skin cancer in the rat by tar is also longer than that necessary in the mouse. It is, therefore, probable that the time required for the induction of cancer is dependent on the particular species involved rather than on the nature of the stimulus.

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GAS-OXYGEN AS A ROUTINE ANÆSTHETIC.

A SUMMARY OF TWO HUNDRED CASES.*

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FOR many years I have felt dissatisfied with both ether and chloroform as routine anæsthetic agents in general surgery. It is probable that many anæsthetists will object to my use of the word "routine," and I agree that one must approach individual cases with an open mind as to what will constitute the most suitable anæsthetic, having regard to such factors as age, type of patient, history of alcohol, and the condition of heart, lungs, and kidneys. Yet I think it must be admitted that in the British Isles generally ether is looked upon as the great stand-by, with chloroform second, gas-oxygen being used for exceptional cases only. When gas-oxygen is used it is more often than not passed through ether, and sometimes through chloroform also. This series of cases was carried out with a view to discovering to what extent gas-oxygen (pure) could displace ether and chloroform in a general surgical theatre.

My chief objections to chloroform and ether are, in both cases, the unpleasant induction and the disagreeable after-effects. There are various ways of minimising these effects, such as careful preparation, suitable premedication, and the use of ethyl-chloride for induction. No amount of care, however, can totally eliminate the unpleasant headache, nausea, and sometimes very distressing vomiting which follow their use, and which create such a bad effect upon the morale of the patient; every surgeon knows how the victims of multiple operations become resigned to anything that may be done to their bodies but grow more and more to hate and dread the anæsthetic. Personal experience of three operations under chloroform and ether went a long way to remove any lingering doubts which may have remained in my own mind of their unsuitability. I think it will be generally admitted that from the point of view of toxicity alone chloroform cannot be regarded as a suitable routine agent. Ether is safe "on the table" but, all other considerations apart, the high incidence of post-operative pulmonary complications makes some substitute highly desirable as a routine anæsthetic.[1]

I have long looked upon nitrous oxide, with its easy, pleasant induction and amazingly short recovery period, as the ideal agent, but difficulty in securing accurate dosage up to the time that I commenced this series prevented my adopting it personally or regarding it as a suitable all-round anæsthetic for general surgical purposes. My enthusiasm for gas-oxygen was first aroused when I saw it used by American anæsthetists during the war, but it subsequently received a check owing to the poor results obtained with the appliances in general use in this country—viz., various forms of the Boyle apparatus. This apparatus must be regarded as a very effective, all-round useful instrument, and there can be no doubt that with it, in its more perfected form, a very good anæsthetic can be given by using gas-oxygen-ether, with or without the addition of a little chloroform, but even in its latest pattern, as modified by Dr. Ross Mackenzie of Aberdeen, I do not regard it as a successful apparatus for pure gas-oxygen. When the apparatus is put into practical use one encounters several factors which make the administration difficult.

1. To ensure good anæsthesia the proportion of oxygen to gas must be capable of very fine adjustment, a difference of 2 to 3 per cent. in the mixture being sufficient to spoil a smooth course. The bubble system, controlled directly from the cylinder valves, is not sufficiently accurate, since nitrous oxide does not always flow in a smooth stream but is apt to come away in rather jerky fits and starts.

2. With this apparatus ether and chloroform, if they are to be used at all, must be used in quantities which spoil the effects of pure gas-oxygen. The reason for this is that with gas-oxygen alone, to ensure good relaxation in the majority of cases it is necessary at some stage of the operation to give a saturation of nitrous oxide which produces rather an unpleasant cyanosis. Most of us dislike the idea of giving even small amounts of ether to a patient with any degree of cyanosis, and to give chloroform at such a time is simply asking for trouble. Therefore, if one just fails to obtain relaxation with pure gas-oxygen (as usually happens with this apparatus) it is necessary first considerably to reduce the saturation of nitrous oxide, leaving a larger balance to be overcome with the additional anæsthetic.

3. The most complete relaxation is secured by what is called "secondary saturation," which is obtained by pushing the nitrous oxide to a stage just short of producing signs of distress and then quickly increasing the proportion of oxygen. This is a valuable method in difficult cases when, for example, the edges of peritoneum are about to be sutured, and by this means relaxation equal to that of full ether anæsthesia can be obtained. This process is only safe with a machine fitted with a safety-valve, a device for instantly shutting off the supply of gas and delivering pure oxygen under pressure or, better still, oxygen with a small percentage of carbon dioxide, which is a powerful respiratory stimulant.

The McKesson Apparatus.

A safety device for instantly inflating the lungs with oxygen is in my opinion a sine qua non for any apparatus designed to give gas-oxygen anæsthesia. Such an arrangement is unfortunately lacking in the standard Boyle. For the series of cases which I am about to summarise I selected and ultimately acquired for use in this theatre a McKesson (Model G) apparatus, which satisfies the essential features I have enumerated.

1. The mixture is independent of the flow from the cylinders, and the proportion, once set, remains constant.

2. The proportion of oxygen to nitrous oxide is capable of very fine adjustment.

* Read before the Forfarshire Medical Association.

[1] Fuller, C. J.: THE LANCET, 1930, i., 115.

3. In case of emergency the lungs can be instantly inflated with pure oxygen.
4. There is no need to be constantly turning taps on and off; when the patient breathes the gases flow; when he does not they stop automatically.
5. The machine is simple and easy to use.

A Series of Cases.

This series includes not only my own anæsthetics but a number given by Dr. W. H. Jeffrey, house surgeon to the unit. The first case was a woman aged 72 years, admitted with acute intestinal obstruction due to carcinoma of the descending colon, and complicated with very troublesome adhesions. The anæsthetic lasted 60 minutes and was a complete success, the patient waking up immediately the operation was finished in apparently better condition than when she arrived on the table. This good start was encouraging. From that date to the writing of this paper (approximately four months) the number of operations requiring anæsthesia in Mr. Alexander's theatre has been 315, classified as follows:—

Gas-oxygen	200
Ether and ether-chloroform mixtures	101
General ethyl chloride	3
Rectal (avertin)	2
Spinal	1
Local	8

The ratio of gas-oxygen to all other anæsthetics given concurrently with this series is, therefore, 200/115; but of these only the chloroform and ether are concerned in this summary. Of the 101 chloroform and ether cases, 24 were for face and mouth operations and endoscopic examinations; of the remainder, 59 were given by house surgeons from other units who were unfamiliar with the apparatus at times when I was not available and Dr. Jeffrey was assisting the surgeon. Thus within the unit there were only 28 cases in which gas-oxygen was abandoned in favour of ether and chloroform. This number includes 11 cases operated upon on days when, owing to transport difficulties, the supply of nitrous oxide failed, and two were children under six months to whom I preferred to give alcohol, chloroform and ether mixture. The remaining 15 operations were nearly all performed during the first half of this series before the potential capabilities of gas-oxygen were fully realised, the second half including only two, both of them operations involving extensive breaking down of adhesions and anastomosis for the elimination of fæcal fistula.

The 200 gas-oxygen cases may be classified as follows:—

1. *Upper abdominal.*—Gall-bladder, 9; perforated gastric and duodenal ulcer, 2; other gastric operations, 6; and laparotomies (various) involving the handling of upper abdominal organs, 15	32
2. *Lower abdominal.*—Appendicectomies including every laparotomy in which the appendix was removed, 60; and acute intestinal obstructions (various), 5	65
3. Kidney operations (lumbar)	5
4. Bladder and prostate	3
5. Radical amputation of breast	3
6. Thyroidectomy	1
7. Bone-plating and wiring	15
8. Hernia (various), varicocele, &c.	17
9. Anal and rectal	7
10. Empyema	4
11. Various	48
Total	200

Of these 200 cases nine required additional anæsthetic (ether or chloroform) to secure the necessary relaxation, as follows: gall-bladder cases (2); gastro-enterostomies (2); appendicectomies (2); herniæ (one strangulated) (2); bone-wiring (1).

The figures speak for themselves; they show that it is possible to anæsthetise a very wide range of cases, including high abdominal cases, with gas-oxygen alone. A critical inquiry must go further, however, and inquire whether the individual anæsthetics have been entirely successful both from the surgeon's point of view and that of the anæsthetist.

Success of the Anæsthetic.

There are three stages to be considered in connexion with the effects of any anæsthetic agent:—(1) the stage of induction; (2) the state of relaxation during the operation; (3) after-effects, both immediate and remote.

In this series the period of induction was found to last from three to ten minutes, with an average of five minutes; but even in cases where the patient "went away" quickly better results were obtained when the anæsthetic could be continued for fully ten minutes before commencing the operation. About half the cases passed through a definite stage of excitement, but, generally speaking, induction was quiet and characterised by absence of struggling. Robust alcoholic cases offered considerable resistance, but settled down, usually rather abruptly, in time. Recovery was rapid in every single case and was rarely accompanied by headache, nausea, or vomiting. A number complained of fuzziness or thickness of the head, which I attribute largely to the effects of the preliminary injection. It was most marked when hyoscine or atropine had been used. (At first patients received morphine sulphate gr. ¼, and either atropine sulphate or hyoscine hydrobromide gr. 1/100 for adults, and others in proportion. Latterly the atropine and hyoscine were stopped, with better results generally.) Vomiting, when it did occur, took place immediately and was slight, the ejected matter consisting of a frothy, clear fluid. The fact that on three occasions vomiting occurred simultaneously amongst a group of patients for whom the same cylinder had been used suggests impurities in the gas as a possible cause. A few abdominal cases ejected bile after manipulation about the gall-bladder. In fully three-quarters of the cases recovery was so rapid that the patients had opened their eyes and were talking and answering questions or making jokes before leaving the theatre. The marked analgesic effect of nitrous oxide was frequently noted in patients who were allowed to come round before the last stitches or clips had been inserted, and who seemed to be unconcerned at what was being done, but occasional hyperæsthesia made it unsafe to let the patient round till the operation had been completed.

An interesting and rather instructive example of the rapid recovery from gas-oxygen was our own theatre sister, who had been trained in the wards to expect and deal with post-anæsthetic sickness. She awoke on the operating table after appendicectomy to treat with contempt and as a poor attempt at flippancy the statement that her operation was over and finished! She later wrote to another sister, "I have had the most wonderful anæsthetic with gas-oxygen; I could scarcely believe that I had been done, and had no sickness or felt anything afterwards except a little stiffness in my wound." Another example was a large powerfully built cattle-man who came up to the theatre from the out-patient department for removal of a bursa from the elbow. He had a strong alcoholic history and, indeed, warned us beforehand to secure him with a strap because during a previous anæsthetic he had fought and struggled so badly that it required two students and four nurses to hold him. He was given gas-oxygen (pure); induction lasted seven minutes, during which there was considerable fidgeting and muttering into the facepiece, but he suddenly settled down and remained quiet during the 20 minutes that the operation lasted. He had no sickness or bad after-effect, and when seen one hour later was fully dressed, feeling quite well, and anxious to get home in time for his dinner.

This series has demonstrated most markedly the overwhelming advantages of gas-oxygen during induction and after operation, the contrast in this respect with other anæsthetics being most noticeable and remarked upon by patients, ward sisters, and even probationers who found that they had less stained bed linen to wash. Remote effects were entirely absent, with one noticeable exception. This is a case which I find difficult to appraise.

The subject was a man aged 45, a butler, with an alcoholic history, toxic, suffering from duodenal ulcer for which he was having a second operation (gastro-enterostomy). Induction was not markedly difficult for the type, lasting seven minutes. There was cyanosis at the first incision, and it was found necessary to maintain a slight duskiness during the whole of the manipulative stage. The colour was deepened just before closure of the peritoneum, and good relaxation obtained at the time of suturing by increasing the percentage of oxygen, after which the patient remained a healthy pink. Recovery as usual was rapid, the patient answering questions before leaving the operating table, and remained uneventful during the next four days. There was no indication of chest trouble

until the fifth day, when slight dyspnœa was noticed. Death took place rather suddenly the same day and was attributed to massive collapse of the lung. Permission for a post-mortem examination was not obtained. Just what part gas-oxygen played in this result is difficult to say. It was the only case in the series which showed untoward remote after-effects.

The condition of the patients during the second stage is, of course, the most important, and the chief criterion of any anæsthetic is, "Does it satisfy the surgeon?" That Mr. R. C. Alexander, the surgeon in charge of the unit, has endured the anæsthetic over a series of 200 cases lasting four months says a great deal in itself, and I think I can safely go further and say that both he and Mr. R. S. Melville have not only put up with, but are enthusiastic about, this form of anæsthesia.

It would be foolish of me to suggest that all the anæsthetics in this series have been perfect. The chief factors leading to trouble have been:—

1. Allowing air to leak under the facepiece. It will easily be understood how much this spoils the balance of an anæsthetic where accuracy in proportion is such an essential.
2. Starting the operation too soon as a result of the smooth quiet induction. In these cases movement occurred at the first incision, but afterwards there was no trouble.
3. Instinctive efforts by the anæsthetist in two directions: (*a*) to avoid cyanosis, letting the patient come round; (*b*) to increase an already deep anæsthesia by giving more gas when what was required was more oxygen—causing spasm and jactitation.

We had difficulty throughout the whole series in preventing air-leaks in sunken toothless faces. Experiments to ensure a satisfactory air-tight inhaler are still being carried out, and several models are under test. The second and third points apply chiefly to the earlier cases of the series and have largely been eliminated by greater experience with the apparatus.

With regard to muscular relaxation, I think all the members of this surgical unit are agreed that gas-oxygen (pure) has met the requirements of every non-abdominal case (where there was no mechanical difficulty in placing the inhaler—e.g., mouth and face operations) and with the easy induction and absence of after-effects have come to regard this agent as the routine anæsthetic of choice. The abdominal group, from the same standpoint, may be divided into operations on the upper and lower abdomen respectively. For all lower abdomen operations in this series gas-oxygen has proved almost without exception to be particularly successful especially for "grid-iron" appendicectomies, for which it has approached the ideal.

This leaves for consideration the most important group of all, both from the surgeon's and the anæsthetist's point of view: the upper abdomen cases (gall-bladders, gastro-enterostomies, partial gastrectomies). The number of these in the series is 32. In one-third of these the anæsthesia was restful and quiet, with perfect relaxation; in another third the patient was distressed by the manipulative efforts of the surgeon, but relaxation at the time of suturing the peritoneum was good. In the last third there were, in more or less marked degree, restlessness, uneven breathing, spasm of the glottis, rigidity of the masseters, and even slight jactitation of the limbs, and the cases were from the anæsthetist's point of view far from satisfactory. Yet in all of them a very interesting thing was noticed—viz., that the peritoneum itself was very lax, that lifting it did not increase spasm of the rectus muscles, and though the viscera showed a marked tendency to bulge into the wound, this was controlled without great difficulty, and the laxity of the peritoneum made suturing less arduous than in many ether anæsthesias which I have seen (and given).

Taking the series as a whole, we had much more success than previous experience of the agent had led us to expect. The number of cases is far too small to base any definite claims on it. The results do indicate, however, that gas-oxygen (pure) given with a suitable apparatus can be substituted for ether and chloroform (and mixtures) as a standard routine agent for a very wide range of cases and with distinct advantage to all concerned.

Cyanosis.

The great controversial point in connexion with anæsthesia by pure gas-oxygen is, of course, the question of "cyanosis." In this series it was found impossible, except in very blonde and anæmic patients, to produce full surgical anæsthesia without cyanosis at some stage of the operation. Generally, at the first incision dark-coloured blood welled into the wound. This is apt to disturb surgeons who are not used to gas-oxygen administration. It is usually taken for granted that this dark blood leads to greater bleeding in the operation area, and one must admit that this is often true, but from the view of various operation wounds which I get from my position at the head of the table, I am quite sure that this is not always the case; in fact, I think that most bleeding comes from the red congested wound frequently met with in open ether anæsthesia. If the surgeon finds in any instance that bleeding is free and disturbing to his work, the anæsthetist must, of course, adapt himself to the requirements, diminish the saturation of gas, and make up the balance with ether. In this series congestion at the wound was never found to be so much a source of trouble as to call for correction, but changes in colour of the mucosa naturally contra-indicate this agent for cystoscopic and proctoscopic examinations; consequently it was never used for this type of case.

Of course, every effort must be made to keep the cyanosis within reasonable limits and to reduce it at the earliest possible moment. It was found possible in this series to let patients return to a pink colour during the quieter parts of the operation, but always before the first incision, on entering or closing the abdomen, and whilst viscera were in any way being pulled upon, it was necessary to give a saturation which caused duskiness of varying degree, amounting in some cases to a definite cyanosis. There at once arises the question of the safety of this degree of saturation. In this series we have had no mishaps [2] nor has any case (with the doubtful exception quoted) caused anxiety on the table or after, though on one or two occasions signs of commencing distress called for use of the safety valve, which in every case produced relief and restored the patient to a bright pink within 30 seconds. Without an arrangement for instantly giving oxygen under sufficient pressure to inflate the lungs I would not deliberately let a patient become blue or remain so for a moment longer than I could help.

A factor making for safety with gas-oxygen is the rather fortunate fact that one cannot over-saturate with nitrous oxide and get good anæsthesia, for as soon as one reaches a certain limit of anoxæmia, before signs of real distress appear, the patient begins to get rigid, and relaxation can only be obtained by giving more oxygen; moreover the observation that, as a case progresses, less and less gas has to be given was amply borne out in this series.

Anæsthetists, whilst agreeing that gas-oxygen is the safest known agent, are practically unanimous in laying down very clearly that this is only so in the absence of cyanosis. It is a matter of common experience, however, that if a patient is to be kept pink throughout with pure gas-oxygen, he will in over 90 per cent. of cases fall short of the state required for even the simplest operation, and the balance necessary for relaxation must be made up with ether. As a matter of fact this is usually what happens and one has frequently felt that in many so-called gas-oxygen anæsthetics the gases have simply formed convenient media for carrying an amount of ether that completely spoils the effect of gas-oxygen. A small quantity of ether given in a closed apparatus corresponds to a very much larger amount poured on to an open mask, and this is especially the case if rebreathing has been employed. "Barely an ounce

[2] Since reading this paper the number of the series has more than doubled. There has been one death "on the table" during induction in a case shown to have been suffering from cerebral syphilis. There was also a death in another theatre during the later stages of an operation for perforated gastric ulcer. Both anæsthetics were given by house surgeons. In my own hands there has so far been no unusual difficulty with this anæsthetic.

of ether" in these circumstances represents a very considerable effect.

Is a moderate degree of anoxæmia, producing cyanosis in blood free from other deleterious agents, necessarily a bad thing in anæsthesia? It must be admitted that we do not yet know exactly how anæsthesia is produced by any given agent. Much experimental work in this connexion has been carried out, but it is difficult for those of us who have no actual experience in this respect and are concerned solely with the clinical side of anæsthesia accurately to appraise the various findings. Air, owing to the high percentage of inert gases, cannot be made the source of oxygen supply, and pure oxygen from cylinders must be used. In this series we found that the saturation of nitrous oxide necessary for ordinary light anæsthesia just about coincided with the commencement of "visible" anoxæmia, whilst for full surgical anæsthesia the proportion of gas had to be increased slightly, producing a definite anoxæmia. From the very great difficulty (amounting almost to impossibility) of maintaining both a pink colour and complete relaxation in healthy adults there would appear to be with nitrous oxide a very close relationship between anoxæmia and anæsthesia, and if this is the case the colour change need not be feared and, properly appraised, is likely to form a useful, though not necessarily in itself an accurate guide to the depth of anæsthesia. It would appear that for every case there is an exact stage in the production of anoxæmia brought about by increasing the nitrous oxide-oxygen ratio at which the patient falls in a perfectly relaxed state. No exact proportion of the gases can be laid down, since the amount of anoxæmia necessary to obtain this result varies with individual idiosyncrasy and with the presence or absence of air leaks in the apparatus, but in this series it ranged between 95/5 to 80/20. In a minority it was possible to reduce the proportion of gas still further. Bad effects from the anoxæmia were particularly looked for, but they were conspicuous by their absence. A number of the cases in this series remained definitely cyanosed during the whole operation without showing the least sign of distress (breathing being quiet and regular, the pulse full, steady, and not unduly quickened), and made an instant trouble-free recovery as soon as the inhaler was removed.

In some cases the path of smooth anæsthesia proved to be a very narrow one, closely limited on either side, and to find and maintain this exact stage proved very difficult. In others, even high abdominal cases, gall-bladders, &c., the administration was entirely trouble-free; so much so that it was found possible to tie the inhaler on the face and leave the patient alone for long periods at a time, the resulting anæsthesia being perfect from every point of view.

An interesting paper showing electrocardiographic tracings of the human heart during and after nitrous oxide anæsthesia appeared in THE LANCET last year.[3] It would be of great value if similar tracings could be taken during a number of actual anæsthetics with chloroform, ether, and gas-oxygen respectively. Efficient portable electrocardiographic machines are now on the market.[4] The tracings show chiefly the effect of a rapid and profound anoxæmia produced with nitrous oxide alone on the heart and demonstrate quite definitely an embarrassment of the myocardium which is absent when small quantities of oxygen are added. The results summarised indicate the possible danger to the patient of excessive anoxæmia, but details of practical value to the anæsthetist, as to the proportion of oxygen necessary to eliminate this embarrassment, are unfortunately lacking. The findings coincide with clinical experience, and I would most unhesitatingly say that to anæsthetise any particular case by producing a rapid and profound anoxæmia with nitrous oxide is undoubtedly dangerous just as to induce anæsthesia rapidly and profoundly with chloroform or ether is dangerous. There must be an element of risk in every anæsthetic that gives full surgical anæsthesia, no matter what agent is used in its production. Whatever its exact action, an anæsthetic is fundamentally a poison which, if given in accurate doses, produces unconsciousness and relaxation, but in only slightly larger doses causes death. The anæsthetist's duty in an extensive surgical operation is to administer and control the poison selected in such a way as to keep the patient poised between life and death, in some cases so near death that all the reflexes are abolished except the vital ones which keep the heart and respiration going. Any poison which so saturates the patient as to cause this state of semi-death must in the nature of things very seriously derange the various physiological functions of the body and constitute a grave risk to life. All anæsthetics are poisons and necessarily bad for the patient, but if they vary at all in the manner of induction, toxicity, rate of elimination or after-effects, it is our duty to select the safest and the least unpleasant. Certainly any degree of anoxæmia producing cyanosis is in itself a bad thing, but clinically in my opinion there is every reason to believe that a patient saturated with nitrous oxide to the extent of producing cyanosis of moderate degree, in the absence of other signs of embarrassment, is less dangerously poisoned than one in whom ether or chloroform has been used to produce the same degree of relaxation. I must repeat and emphasise the necessity for having an apparatus capable of accurate adjustment and of instantly and effectively correcting any excess of cyanosis.

The Present Position.

Dissatisfaction with open ether as a routine anæsthetic has resulted in various other forms of anæsthesia being put into more extensive use—e.g., local infiltration, spinal and rectal. They must all be considered on their merits in connexion with individual cases. The object of publishing this summary is not to displace any of the newer methods in favour of gas-oxygen for any particular case, but merely to suggest this agent as one very effective substitute for the inhalation of ether or chloroform as a routine.

The contra-indications to gas-oxygen are comparatively few; face and mouth operations present mechanical difficulties to the exclusion of air; changes in colour render this agent unsuitable for endoscopic examination of mucosæ, and congestive bleeding is likely to make certain operations difficult—e.g., colporrhaphies and operations requiring detailed dissection, especially where there may be mechanical obstruction to the air-way, as in operations for glands of the neck. It is more difficult to use but not necessarily contra-indicated in robust, toxic, alcoholic adults; indeed, difficulty with gas-oxygen most commonly occurs in cases where difficulty would also be found in using ether or chloroform. It is said to be unsuitable for cases with heart disease, but trouble in this respect was not encountered in this series. Children required continuous fresh gases and were easily embarrassed by rebreathing. In this series we had only two infants under one year, and for these I preferred to use alcohol, chloroform, and ether mixture with oxygen.

So far as one can make out there is a definite trend towards more general use of gas-oxygen. The reason why chloroform and ether have held their own for so long is that they require only the simplest of apparatus for administration, and this is a point which must necessarily weigh strongly with the profession generally when comparing the merits of various anæsthetic agents. The advantages of gas-oxygen are certainly gained at the expense of portability. The McKesson Model G used in this series is an expensive apparatus, and the same may be said of others at present in the market. These factors should not be allowed to weigh too strongly in the case of institutions where every patient who enters a surgical ward receives at least one anæsthetic. A sum of £100 spent on anæsthetic apparatus seems to me to be of infinitely greater proportionate value than £2000 to £3000 spent

[3] Ward, G. E. S., and Wright, S.: THE LANCET, 1929, ii., 1184.
[4] Goodall, J. S., and Hoskin, T. J.: Brit. Med. Jour., 1930, i., 107.

on radium with its comparatively limited application. There is without doubt, however, a call in this country for an efficient, cheap, portable outfit and for better and cheaper gas. It is likely that a more general demand for gas-oxygen would stimulate production. The actual cost of the nitrous oxide and oxygen used in this series worked out at slightly less than 2*s.* 6*d.* per case; this includes transport of the cylinders, a considerable item which would be largely eliminated with more general use and the laying down of more depôts.

Gas-oxygen has, of course, a much wider application than has been considered in this summary, which deals only with its advantages in a general surgical unit.

One of the most satisfying features in carrying out this series has been the number of successful anæsthetics given by Dr. Jeffrey, house surgeon to the unit, who, though he has an undoubted flair for this kind of work, had no previous experience of anæsthesia except that gained as a student. His successful use of gas-oxygen in acute abdominal cases has been particularly valuable.

In conclusion, I must thank Mr. Alexander and Mr. Melville, not only for their ready acquiescence in the carrying out of the series, but for their wholehearted encouragement throughout.

Clinical and Laboratory Notes.

FURTHER REMARKS ON ENTERIC AND THE WIDAL TEST.

BY EUSTACE THORP, O.B.E., M.B. BELF., L.R.C.P. EDIN., D.P.H.,

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RECENT communications from bacteriologists on the value of the Widal test from their point of view lead me to elaborate my previous remarks[1] on this test from the clinical aspect, in view of further cases seen since that time. In the former note I drew attention to the long delay in the appearance of the reaction in many cases of enteric fever, including abortive and ambulant cases. Indeed, the test often only became positive long after a clinical diagnosis was possible and sometimes only late in convalescence after repeated negative results. So doubtful did I become of the test after seeing undoubted cases of clinical enteric die before a positive result was obtained, that I held up other negative cases and took repeated blood tests and in many instances finally obtained positives from the twenty-sixth day onwards. Frequently a test with negative result had been taken by the practitioner outside hospital, and this negative had postponed or altogether prevented the patient's admission. The history of a negative Widal would no doubt also modify the after-treatment, enteric being ruled out both in the patient and in other members of the family who might become ill.

I have formed the opinion that the margin of error in the reaction is much greater than is generally supposed, that a negative reaction is not of importance where clinical evidence is present, and that a late Widal or repeated Widals must be taken before excluding the disease. I now add a few selected examples from cases where the patient lived long enough to obtain a positive result—as some unfortunately did not. They show how possible it is for such cases to be missed or written off as "pyrexia of unknown origin," and the existence of such cases shows where the odd sporadic case comes from.

CASE 1, aged 39. Her father died on Jan. 1st, 1930, of "broncho-pneumonia"; the patient nursed him and took to bed on Jan. 14th. The Widal test was negative on Feb. 3rd and positive, 1–125, on Feb. 20th. Clinically enteric was diagnosable on Jan. 22nd.

CASE 2, aged 57, was ill for five weeks with irregular pyrexia. He had a typhoid tongue and a somewhat enlarged spleen. On account of a stool containing blood, a Widal was taken by the practitioner on March 3rd, 1930, the eighteenth day of the illness, and was negative then and again on March 13th. It was positive on March 23rd and 31st. This was admittedly an atypical case but it is just such cases which require detection.

CASE 3, aged 20, was admitted on the fourth day of the illness, having had vague abdominal pains, and was notified as enteric on account of a typhoid tongue, a slightly enlarged spleen, and a high remittent pyrexia. In hospital the patient appeared well except for pyrexia. Blood culture was negative on March 3rd, 1930. The fæces and urine were negative on March 7th. Widals were negative on Feb. 20th and 24th. The chest was X rayed and showed no abnormal findings; sputum was negative. The Widal was positive on March 18th, 1–500.

CASE 4, aged 28, was admitted on the fifth day of the disease; the temperature fell on the eighth day. The Widal was negative on the ninth day, but ten days later was positive, the temperature having remained down.

The following points impressed me most in these atypical and ambulatory types: (1) The typhoid tongue was usually recognisable. (2) No typical temperature chart was common to all, nor did the continued type of pyrexia appear; apyrexia was common. (3) The appearance of rose spots was delayed, if they appeared at all, and Widals were negative until well into convalescence. (4) Any hæmorrhage from the bowel, however slight, in supposed pneumonia is of great importance, especially in apparent convalescence; a positive Widal is frequently obtained after this. (5) When pneumonia is prevalent, cases such as the above may masquerade as pneumonia. (6) To obtain a positive Widal the stay in hospital may have to be prolonged. (7) Death may occur from hæmorrhage or toxæmia before a "positive" can be obtained. (8) The Widal usually came down, even in ill patients, in dilutions up to 1–500.

[1] THE LANCET, 1928, ii., 972.

SOME ASPECTS OF IODINE THERAPY.

BY W. MITCHELL STEVENS, M.D., F.R.C.P. LOND.,

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IN his "Principles and Practice of Medicine" Osler writes: "Longevity is a vascular question, which has been well expressed in the axiom, 'A man is as old as his arteries.' In a majority of men death comes primarily or secondarily through this portal." The truth of the above remarks is indisputable, but, nevertheless, one naturally feels inclined to ask the question, Can these vascular affections (and associated heart affections) be prevented, be delayed or, having once set in, be arrested for a shorter or longer period?

For many years I have been studying the uses of iodine (as iodides) in arterial affections such as aneurysm, arterio-sclerosis, high arterial blood pressure, and other related conditions, whether such be of syphilitic or other origin, or merely the accompaniment of what is termed "senility." I am confident that the exhibition of iodides may prevent or retard arterial changes and arrest them, when present, for shorter or longer periods, and that the doses required for various purposes vary from very small, even minute, quantities to large amounts, and that no ill-effects whatever occur from the drug itself when judiciously given.

I regard the arterial changes occurring in what is called "old age" to be similar in kind to the changes due to other causes. It appears that senility is, in one sense, a disease and, doubtless, an inevitable one if a person survives long enough, so to speak, but I am inclined to think that, as far as the arteries are concerned, it is a deficiency manifestation or, in other

words, that some substance normally present in the blood which defends the arteries becomes deficient either in quantity or quality or both, and that this deficiency may be the expression of a defect in what may be broadly called iodine metabolism, and that it may be corrected, at least for a time, by giving iodine, even in minute doses, bearing in mind the remarkable selective absorption shown for this element where needed.

Iodine is present in all plants and animals, and maybe this extraordinary element will come to be recognised as the harmoniser of the hormones. I visualise the day when the duration of life of a considerable proportion of the human race may be extended, and when distressing heart affections not due to what may be called external agencies may be far less prevalent than they are at the present time.

Medical Societies.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

A MEETING of this Society was held at Leeds on April 11th, with Dr. J. W. BURNS, the President, in the chair.

Clinical Cases.

Dr. A. M. CLAYE (Leeds) described a case of congenital rectovulval fistula with multiple fibroids impacted in the pelvis and obstructing the progress of a full-time labour. Her menstrual history had been normal throughout life, and she had no discomfort during gestation. Dr. Claye delivered her of a living male child by Cæsarean section, and followed this by performing subtotal hysterectomy. Both patient and baby recovered well. He had been able to find in the literature only two cases in which a patient became pregnant with this abnormality.

The PRESIDENT recalled that in 1929 he had reported a similar case to the society where the patient, who had three children, was unaware of her abnormality.—Mr. W. GOUGH (Leeds) said he had seen a similar case.

Mr. A. GOUGH (Leeds) described two cases of excessive uterine hæmorrhage associated with enlarged ovaries in young women. In one case the patient, aged 22, had suffered from menorrhagia and metrorrhagia for two years, which continued in spite of curettage. An operation was performed in which the right ovary was removed and half the left ovary resected. The excessive loss was improved. In the other case the patient, aged 23, gave an identical history, though the losses had only been excessive for seven months. In each case the removed ovary was between three and four times the normal weight, of a "succulent consistence," showing histologically increased stroma and numerous small cysts. He said there were few references to this condition, which he considered rare, but that similar observations had been made by Blair Bell, Whitehouse, Wilfred Shaw, Cotte, and Fekete.

Mr. ERIC STACEY (Sheffield) said he thought this condition of hypertrophy and formation of cysts of the ovary, associated with excessive losses, in young women was very common indeed, and he had operated on many cases in which by partial resection he had reduced the bulk of the ovaries, with cure of the patient. In his opinion the condition was associated with most of the causes of pelvic congestion, whether physical or psychological.—Mr. A. A. GEMMELL (Liverpool) thought this was true of some cases, but many young women suffered from menorrhagia in which the cause was excessive function of the thyroid and would be cured by applications of X rays to that organ, whilst others had similar symptoms due to hypothyroidism, and were improved by taking thyroid daily for some months.—Dr. J. W. A. HUNTER (Manchester) considered that administration of calcium chloride intravenously with the addition of parathyroid would usually prevent operation in these cases.

Spinal Anæsthesia.

Dr. HUNTER read a short note on the Value of Spinal Anæsthesia in Cases of Difficult Midwifery. He thought its scope was limited, but there was an advantage in the greater relaxation of the birth passage without interference with the uterine contractions; also chest complications seemed to be less and there was easier breathing than under general anæsthesia. The greatest advantage of spinal anæsthesia was that it improved the prognosis in cases where an otherwise healthy patient had developed a temporary acute anæsthetic bronchitis as a result of one or several previous and badly administered anæsthetics. He advocated its use, therefore, in cases of failed forceps. He had also used it in three cases in which a dry, prolonged labour, with a rigid, undilated cervix was ended by cervical hysterotomy and forceps delivery. He had also used it in heart disease.

Dr. BURNS read the communication published in THE LANCET of May 10th, p. 1012. He considered that the scope of spinal anæsthesia in midwifery was limited to Cæsarean section, and by its use in this operation had found there was a diminution in the amount of blood lost with no increased risk to mother and child, and a more speedy recovery of the patient, without chest complications.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

A MEETING of this Section was held on May 23rd, with Dr. R. J. ROWLETTE, the President, in the chair.

Meningitis and Encephalitis.

Dr. R. H. MICKS read a communication entitled Atypical Meningitis. Last year, he said, he had seen three cases of meningitis which had presented the following symptoms: (1) a cerebro-spinal fluid which was turbid with polymorphs; (2) absence of organisms as tested both by direct film examination and culture on standard laboratory media; (3) negative Boveri reaction; and (4) an atypical course in that two out of the three recovered, and the third showed a very striking and well-maintained improvement until the patient died suddenly with a normal temperature. Mild recoverable meningitis was undoubtedly more common now than was once believed. Encephalomyelitis and associated meningitis of various types had increased in frequency—especially the type associated with vaccinia and measles—and there had been sporadic cases which were not associated with exanthems and were not apparently similar in course or post-mortem appearance to encephalitis lethargica. Six cases of this kind had been described by Russell Brain and others.[1] But in all these examples of mild meningitis the cell count was usually low, and the predominating cell the lymphocyte. A marked polymorph increase was apparently very rare in a meningitis which was not due to recognisable bacteria. For this reason he had thought these three cases worth recording as something well-removed from a lymphocytic meningitis or a "meningismus." In Dr. Micks's opinion Boveri's reaction, if properly carried out, was of great diagnostic value in clear or nearly clear cerebro-spinal fluid. He had noticed that a very marked polymorph leucocytsis might follow intrathecal injection of a foreign protein. This rather alarming phenomenon was not sufficiently known;

[1] THE LANCET, 1929, i., 221.

indeed he had only been able to find one reference to it in the literature.

Dr. V. O. McCORMICK described the illness of one of the patients. There were no localising symptoms from the first day of the illness.

Dr. V. M. SYNGE read a paper on Mumps Meningitis.

His patient, a boy aged 9, first complained of severe headache and vomiting on May 4th. He was seen by Dr. J. F. O'Grady late the following evening and was sent into the Royal City of Dublin Hospital. His temperature was 104° F., and the pulse-rate 136; he was delirious, semiconscious, and incontinent of urine; the neck was stiff, and there was a slight doubtful Kernig sign. The pupils were equal and reacted to light; the knee-jerks brisk, especially the left, and the right parotid swollen. Lumbar puncture (on May 6th) gave a clear fluid under slightly increased tension; globulin was increased, sugar absent, and the Boveri test negative; the fluid was sterile on culture and showed no tubercle bacilli; it contained 300 cells (lymphocytes) per c.mm. The patient gradually improved and left hospital on May 21st perfectly well.

The enlarged parotid, the character of the cerebro-spinal fluid, and the rapid recovery left no doubt, said Dr. Synge, of the diagnosis of mumps meningitis. Roux stated that meningitis occurs in 1 per cent. of cases of mumps, while Dopter gave 9·8 as the percentage of cases which showed meningeal symptoms, though he did not regard all of them as true meningitis. In Dublin meningeal complications certainly did not reach these figures.

The PRESIDENT spoke of a case of urticaria which he had treated some years ago and which showed symptoms of meningitis. He gave salicylate of soda, and the patient got perfectly well. No lumbar puncture had been done, and there had been no such thorough examination as would now be made.

Dr. J. O'CONNOR mentioned a case which he was looking after in hospital, a baby of 10 months old.

Vaccinated on May 3rd he became ill on the 10th, being cross and very restless, with vomiting. Next day he was quiet and apathetic, and on admission to hospital his condition resembled tetanus. Lumbar puncture was done and fluid was removed under tension, but proved to be perfectly clear. The Boveri reaction was positive. After lumbar puncture the tetanic spasms completely disappeared, but next night further spasms occurred, and there was some rigidity of the neck. When Dr. O'Connor tried to obtain Kernig's sign, the whole musculature of the child's body was thrown into action. A further lumbar puncture was done, and again Boveri's reaction was positive. Lumbar puncture had been done three times subsequently, and that day a ventricular puncture had been done through the fontanelle, clear fluid being removed under tension.

At first, said Dr. O'Connor, it was thought that the case might be one of encephalitis following vaccination, but the vaccination had not taken, and there had been no reaction at all. The child was afebrile, and no focus of infection could be found.

Dr. CYRIL MURPHY mentioned the possibility of the infection coming from the antrum and producing inflammation of the dura and a slight Boveri reaction. He referred to a case of this kind in which the patient ultimately made a good recovery. He thought that too much reliance should not be placed on the Boveri reaction.

Dr. A. HALPENNY said she had found that cases in which the cerebro-spinal fluid was clear and contained lymphocytes and polymorphnuclear cells and in which an immediate positive Boveri reaction was obtained were invariably tuberculous.

Dr. G. E. NESBITT referred to cases which might or might not be classed as meningismus, in which the fluid was opalescent.

One evening a lady got a severe headache and vomiting, and next day she stayed in bed. On the following day she was no better and was seen by Dr. Nesbitt. She was very dazed, and had indefinite symptoms. He did a lumbar puncture and removed turbid fluid. Antimeningococcal serum was then injected. No organism was found in the fluid. Lumbar puncture was done again the following day, and more serum was injected. After three days a few meningococci were found with great difficulty. The patient made a complete recovery.

Dr. Nesbitt thought it possible to have meningococcal infections in which the organisms were so few that it was impossible to find them. He mentioned a case of encephalitis with undoubted signs of meningeal infection which he had recently seen.

Dr. J. LAIT mentioned a case of tetanus which had been admitted to hospital with definite trismus.

A lumbar puncture was done and the fluid was quite clear, but there was a slight increase in the cell content. Serum was injected, and on the following day another lumbar puncture was done, and 10 c.cm. of turbid fluid was removed. More serum was injected, and the fluid on examination proved to be full of pus cells. The patient's symptoms did not increase, in fact, his condition rather improved. In a couple of days the fluid was sterile.

This case, Dr. Lait thought, brought out the fact that an increase in polynuclear cells following the injection of serum took place. The patient made a complete recovery.

Dr. A. R. PARSONS suggested that it was rather rash to inject antitoxin "on the offchance." He personally always had the fluid examined first to see if meningococci were present.

Dr. MICKS, in replying, said his cases had all been ones in which there were clearly marked symptoms of meningitis, and in which the fluid had come out quite turbid. He did not regard any of his cases as meningococcal meningitis. He thought that whenever turbid cerebro-spinal fluid was found it was necessary to inject meningococcal antiserum before receiving the report on the fluid, for it was sometimes very hard to find meningococci. If the infection was not meningococcal no harm was done, provided care was taken to avoid protein shock in a sensitive patient.

Spirochætal Jaundice.

Dr. NESBITT described the case of a man aged 22 who was sent to hospital in November last as a case of "acute abdomen."

About 10 A.M. three days previously, when working in the fields, he got violent pain between his shoulder-blades. This pain travelled down, and in the afternoon became so severe that he had to stop working. A couple of days later he came to hospital. He looked very toxic, and there was a definite icteric touch in the skin. His tongue was very furred, temperature normal, pulse 100. He vomited almost without ceasing from the time of his admission. The urine contained albumin and there was a slight reduction of Benedict solution. The case was at first thought to be one of either acute pancreatitis, typhoid fever, spirochætosis, icterohæmorrhagica or trichinosis.

On the second day after admission his condition was much the same, the vomiting persisted, and he complained of severe thirst, and very severe pain in his legs. Morphia gr. ¼ was given without relief, but after the dose had been repeated an hour later the patient slept. A blood film showed eosinophilia; a blood culture was negative. That evening he was a little better, and his pains had quite gone, apparently owing to the morphia. Next day, though jaundice was very marked, he said he felt better, and had no pain; but he was still vomiting, very thirsty, and passing no urine, and he developed a crop of red spots on his shoulders. Next day he had a bad hiccup, was still vomiting, and was very heavy and drowsy. Fisher's solution was injected. On the day afterwards he was still passing no urine, and complained of great abdominal pain, much like the pains in his legs. It was then thought that he must be suffering from some acute abdominal condition. On the following morning he passed about 2 c.cm. of urine, greenish in colour, but containing no spirochætes. The abdomen was rather distended and tympanitic, but soft. Pituitrin was given, and immediately relieved the abdominal pain. At 1 o'clock he became very weak and said he could not breathe, and at 1.45 P.M. he had a similar attack and died.

Post-mortem examination showed nothing very remarkable. The liver and kidneys were large and smooth. The mucous membrane looked as if some strong acid had been put over it which was dissolving it away. All the organs were intensely bile-stained, but histologically showed very little damage considering the toxic condition of the patient clinically.

Spirochætal jaundice, said Dr. Nesbitt, had been described by Weil in 1886, but it appeared that the same disease had previously been described by

many authors. In 1914 spirochætes were found in the liver of a guinea-pig which had been inoculated with the serum of an infected patient.

Dr. T. T. O'FARRELL said he had examined specimens from the lungs, liver, pancreas, spleen, intestine, and a gland from the stomach in this case. He found nothing in the pancreas, but in the spleen he found an organism, but failed to find organisms anywhere else, except in the kidney where he found a few. He was quite convinced that they were spirochætes, but it was impossible to say whether they were leptospira or whether the spirochætes were the causal organisms.—Dr. LAIT said he had examined specimens from this case and had not found any spirochætes. He thought it possible, however, that they might have been present, but was confident that there were no leptospira.—Dr. W. H. ASHMORE mentioned the possibility of the case being one of metallic poisoning, and asked if the organs had been examined for arsenic.

Dr. O'CONNOR referred to a case reported by V. de Lavergne [2] of a man who fell into a ditch, and a few days later developed well-marked jaundice and epistaxis and complete anuria. In this case it was proved that the man had not swallowed any virus, and infection must have been via a scalp wound 16 days old.

Dr. NESBITT, in replying, said he had thought of arsenical poisoning, but no evidence of arsenic had been found in the organs examined. He thought the organs would have shown more damage histologically if it had been a case of arsenic poisoning. Patients with spirochætal jaundice were usually said to suffer from diarrhœa, but his patient had obstinate constipation.

Dr. LEONARD ABRAHAMSON showed a patient suffering from myelogenous leukæmia.

Reviews and Notices of Books.

RHEUMATISM.

Arthritis and Rheumatoid Conditions. By RALPH PEMBERTON, M.S., M.D., Physician to the Presbyterian Hospital, Philadelphia; Associate Professor of Medicine in the Graduate Medical School of the University of Pennsylvania; Chairman of the American Committee for the Control of Rheumatism. London: Baillière, Tindall and Cox. 1929. Pp. 354. 25*s*.

THIS book will prove of great value to all wishing to become familiar with recent work on rheumatoid conditions and arthritis. The treatment of these diseases has too long been a fruitful field for the unqualified practitioner, and the whole subject needs to be thoroughly investigated and placed on a more scientific basis; this Dr. Pemberton and his associates have attempted to do, and in as far as our present state of knowledge allows they have been successful. Especially interesting is the section named rather oddly "dynamic pathology," which is the study of the nature of the disturbances in the normal physiology in early stages of arthritis. The importance of this line of investigation is self-evident and the work on sugar metabolism, capillary circulation, and the constitution of the synovial fluid is of great significance from the point of view of ætiology and treatment. Physiotherapy will no longer merit the reproach of being an empirical form of treatment if these careful researches reveal that the general beneficial results can be explained by its effects on the biochemistry of the blood and on the circulation. The work already done demands the abandonment of several popular theories, such as the supposed rôle of lactic and uric acid in these diseases. The proper treatment of arthritis is, as the author says, one of the most involved chapters in modern medicine, and this book should help to clear the way.

[2] Bull. et mém. Soc. méd. des hôp. de Paris, 1928, lii., 1498.

Der Sogenannte Rheumatismus. By Dr. JULIUS BAUER, Professor an der Universität Wien. Dresden and Leipzig: Verlag von Theodor Steinkopff. 1929. Pp. 136. M.10.50.

THE purpose of this little book is to summarise for the benefit of the general physician the most significant work that has been done of recent years on the so-called rheumatic conditions. The localisation, pathology, anatomy, and ætiology of the different manifestations are first discussed, then each type is described separately, together with appropriate therapeutic measures; particularly those the author has from personal experience found of value. In discussing the ætiology of primary chronic arthritis Dr. Bauer says that the streptococcus which can occasionally be isolated from the joint and can in 90 per cent. of cases be found in the gut will, on intravenous injection into a rabbit, produce a non-suppurative arthritis; on the other hand, the strain found in the tonsils and the teeth will not produce typical joint changes. He makes the observation that a positive blood culture in these cases can only be obtained in autumn and winter, never in summer or spring. In our experience a positive blood culture in chronic arthritis is very rare. In the treatment of acute rheumatism Dr. Bauer considers sodium salicylate as good or better than any of the modern preparations, and in order to avoid upsetting the stomach with the large doses he finds necessary, part is given twice daily per rectum and the rest by the mouth. Iodine he finds of value in both specific and non-specific joint affections; it is given intravenously and may be injected directly into the joint. This book can be strongly recommended. It is relatively short and is easy to read.

MODERN TREATMENT OF DISEASES OF THE THROAT NOSE, AND EAR.

By H. LAWSON WHALE, M.D.Cantab., F.R.C.S.Eng., Surgeon to the Special Department at the Hampstead General Hospital. London: Jonathan Cape. 1930. Pp. 128. 5*s*.

THIS little book is one of a series on Modern Treatment, so planned that the general practitioner should be able to acquire for a small price, and to keep at his elbow or in his pocket reliable guides to the present state of opinion and practice in some of the special branches of medicine and surgery. Mr. Lawson Whale has made a brave attempt to cover an enormous field within the limits of 128 small pages, and the bibliography at the end of each chapter will be of use to those wishing to go more thoroughly into any particular detail. Written on a strongly personal note, the book makes interesting and amusing reading.

CANCER OF THE LARYNX.

Treatment of Intrinsic Cancer of the Larynx and Hautant's Method of Hemilaryngectomy. By MARCEL OMBRÉDANNE, Assistant in the Oto-laryngological Department of the Tenon Hospital. Paris: Masson et Cie. 1930. Pp. 135. Fr.25.

Dr. Hautant's experience of intrinsic cancer of the larynx has not been entirely, or even principally surgical, for most of the 200 cases which have come under his observation during the last ten years have been treated by radiotherapy at the Curie Institute. He has, however, in the last four years treated 65 cases by operation, and has elaborated a technique which Dr. Ombrédanne, his assistant and former resident, describes in the present work. The author, therefore, takes a wider standpoint than that of purely surgical intervention, and we have not seen a better résumé of the present position of the treatment of endolaryngeal cancer than that contained

in the preliminary chapters of this book. The result of treatment by X rays and by radium is discussed, as well as those of the operations of laryngotomy and laryngectomy. The experiences are detailed of the more prominent exponents of these methods throughout the world, and a very complete bibliography is appended. Though the author is not dogmatic, his point of view may be summed up as follows. Radiotherapy is giving very good results, but it is at present impossible to foresee the effect of this treatment in individual cases and therefore surgery still remains our principal weapon, especially in cases of epithelioma of the cutaneous or intermediate types. Laryngectomy is achieving better results than formerly, largely because the indications for operation are more strictly formulated, and cases are no longer considered operable when the arytenoid is even slightly swollen or the anterior wall of the pyriform sinus a little bulged. On the other hand, laryngotomy has extended its sphere, largely under the influence of StClair Thomson in England, to include cases involving the anterior commissure and the subglottic region, and has indeed become a kind of internal hemilaryngectomy.

Under these circumstances Dr. Hautant believes that there is scope for an intermediate operation of the type of hemilaryngectomy which Dr. Ombrédanne here describes minutely with the assistance of a series of excellent drawings. The chief features of this operation are that the section through the thyroid cartilage is made a little to the sound side of the anterior commissure; the anterior part of the cricoid on the diseased side is resected and the posterior two-thirds of the thyroid ala are spared, the anterior third being removed in one piece with the growth. Posteriorly, the section is made through the body of the arytenoid cartilage; the posterior wall of the larynx, forming the interarytenoid curtain, is not removed; the lumen of the larynx is not opened until the last stage of the operation; the cavity is packed until the fourth day, and the patient is able, and encouraged, to drink immediately after the operation. The tracheotomy tube is removed at the end of three weeks, but a permanent cannula has been necessary in the only two women submitted to operation. The author is of opinion that cases with invasion of the anterior commissure or subglottic region, too extensive for the operation of laryngotomy, can be treated by this method with far better functional results than can be obtained by laryngectomy. Well and clearly written, this little book should be read by all interested in the treatment of cancer of the larynx.

SOME ASPECTS OF THE CANCER PROBLEM.

Edited by W. BLAIR BELL, B.S., M.D.Lond., F.R.C.S.Eng., Director of the Liverpool Medical Research Association. London: Baillière, Tindall and Cox. 1930. Pp. 543. 64*s*.

Prof. Blair Bell has undertaken a considerable task in editing this comprehensive collection of papers on the cancer problem. Most of them have appeared in the medical press at various times, and many of them were originally published in THE LANCET. The book links up the various steps in the development of lead therapy from its inception in 1920 to its present interesting but still indecisive position. The earlier papers are chiefly concerned with the theory of the similarity between malignant cells and chorionic epithelium, which gave rise to the use of lead as a therapeutic agent, and with the nature of cancer, viewed as a specific process, rather than as the consequence of a specific cause. Reports on a number of elaborate biochemical investigations of the normal and the malignant cell membrane follow, with reference to their permeability, and a series of papers on the hydrogen-ion concentration of the blood and tissues in normal persons, cancer patients, and fœtal rabbits. Some inferences are drawn from experiments showing similar metabolic behaviour in chorionic epithelium and malignant tissue, and the effects of metallic salts on the metabolism of various tissues are discussed, with especial reference to the action of lead. Several papers follow on the effects of lead on growth in plants and animals, and some detailed work on its action on the chorion and on cancer cells; various preparations of lead, their fate in the body, and their toxicity are discussed. The final chapters include papers on the treatment of cancer with lead, and the present position of lead therapy, followed by a detailed series of cases in which the treatment has been used. In some of these the results appear to have been inconclusive, in some it is still too early to draw definite inferences, but there remain a proportion in which lead therapy appears to have produced a temporary or permanent benefit. The book ends with a brief summary of the position—too brief perhaps to convey a balanced idea of the whole; indeed, the book itself, in spite of the paragraphs connecting the reprints is rather incoördinate. But it provides a valuable aggregate of the literature on lead therapy which has emanated from the Liverpool school.

MICROSCOPIC PHARMACOGNOSY.

By WILLIAM MANSFIELD, A.M., Phar.D., Ph.G., Dean and Professor of Botany and Materia Medica, Union University, Albany College of Pharmacy, Albany, N.Y. London: Chapman and Hall, Ltd. 1929. Pp. 211. 15*s*.

AN essential part of the training of the student of pharmacy is in the technique of examining powdered drugs by the microscope, so that he may become familiar with the cellular structure and cell contents of the different parts of plants in common use. In this text-book, designed for such students, the author has selected typical drugs in order to include practically every type of cell to be found in the official pharmacopœias, and has illustrated every part of the description with numerous drawings drawn to scale. The reader is thus offered a pictorial as well as a written description of each drug. The book should prove of value to students of pharmacy, and will be appreciated as a handy work of reference by pharmacists and drug analysts.

HOW TO STAIN THE NERVOUS SYSTEM.

By J. ANDERSON, Head Laboratory Assistant at the National Hospital for Diseases of the Nervous System, London. Edinburgh: E. and S. Livingstone. 1929. Pp. 139. 5*s*.

THIS excellent manual of staining methods should be of value to the general as well as the special histologist. Among many useful stains, two, tested by the reviewer, may be specially recommended. The one gives directions for ripening carmine solutions, and has been found satisfactory on dye from six different sources; the second is a counter-stain and mordant for nuclei to be used with Mallory's aniline-blue-orange-G. Its constituents are at hand in any laboratory, and the difficulty of nuclear staining is overcome without recourse to azan.

DISEASES TRANSMITTED FROM ANIMALS TO MAN.

By T. G. HULL, Chief Bacteriologist, Illinois Department of Public Health. London: Baillière, Tindall and Cox. 1930. With 29 text figures. Pp. 350. 25*s*.

IN 1796 Jenner wrote "the deviation of man from the state in which he was placed by nature seems to have proven to him a prolific source of diseases. From the love of splendour, from the indulgences of luxury, and from his fondness for amusement, he has familiarised himself with a great number of animals, which may not originally have been intended for his associates." And in this book Dr. Hull gives a straightforward satisfying account of the consequences of man's interference with the order of nature, and details the various human diseases

in the causation and transmission of which the higher animals play an essential or substantial part. Most of the information is not difficult to come by in other books, but it is convenient to have it put together in this form, especially perhaps for veterinarians.

PARENTHOOD: DESIGN OR ACCIDENT?

Second edition. By MICHAEL FIELDING. Introduction by H. G. WELLS. London: Noel Douglas. 1930. Pp. 168. 3*s.* 6*d.*

THIS is a revised and enlarged edition of the book that was reviewed in our columns two years ago. "Michael Fielding" is a pseudonym; the author is a medical man who wishes to remain anonymous. This edition has been brought thoroughly up to date, and will prove of much value, not only to the couple wanting information on the control of conception, but also to the medical practitioner desirous of knowing what research is being done on the subject, and what the prospects are of improving the existing methods. A valuable chapter on "Methods of the Future" includes accounts of temporary sterilisation by spermatoxins, hormones, and X rays, and of some of the researches of the Birth Control Investigation Committee. An excellent description of the recently popularised German spermaticides includes a short note on some of the findings of Dr. J. R. Baker with regard to the comparative spermaticidal power of soluble pessaries on the market. The book fully bears out the introductory remark of Mr. H. G. Wells, who says: "It is at once the most exact, plain and unexciting handbook on these intimate mysteries that I have ever read." It is, moreover, impartially written. Upon the relative value of different contraceptive methods, and upon the general satisfactoriness and reliability of these methods—which are more and more being called into question—the author writes objectively and without bias. The book is unique of its kind, and can be warmly recommended to medical readers.

THE SEX FACTOR IN MARRIAGE.

By HELENA WRIGHT, M.B., B.S. Introduction by Rev. HERBERT GRAY, M.A. London: Noel Douglas. 1930. Pp. 100. 3*s.* 6*d.*

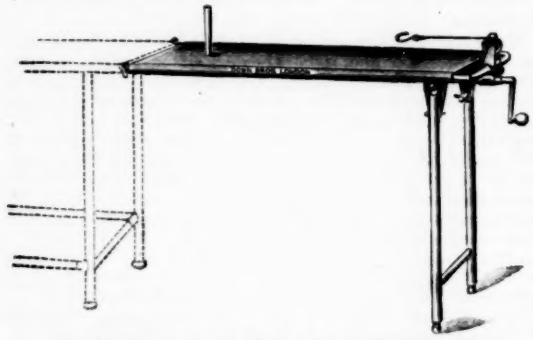
THE reader is informed in the introduction that this book "is addressed to those about to be married in the hope that it may save them from mistakes and sufferings which have darkened married life for thousands of couples." It contains six chapters on the sexual side of marriage, the nature of the sex act, the sex organs of men and women, difficulties in early marriage, the perfect sex act, and finally, a chapter entitled "Other practical issues." The volume is prefaced by a quotation from the Archbishop of Canterbury, in which freedom of discussion on sexual matters is demanded, and it stresses throughout the spiritual side of marriage. From this, it must not be inferred that the physical aspects of the relation are glossed. On the contrary, they are described in detail, and the comprehension of the layman is aided by familiar diagrams of the genital organs.

Though it may be thought by some that too much stress is laid on processes of genital manipulation, the book can safely be recommended by medical men to those about to get married who ask for advice.

New Inventions.

A TRACTION FRAME FOR FRACTURES OF THE LEG.

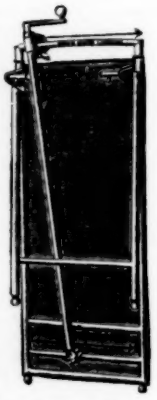
I HAVE had made a portable extension apparatus (shown in the illustrations) which may prove useful in such hospitals as are not equipped with special orthopædic facilities. It presents the following advantages: (1) It is simple and quick to adjust. (2) Although possessing enormous power, any degree of extension can be provided without effort, as



The traction frame attached to an operating table.

gradually and as gently as desired, in order to overcome muscular contraction without unnecessary damage to the soft parts. (3) If open operation is required the actuating mechanism is distant from the site of the wound. The desired result is obtained with less disturbance of the periosteum and the neighbouring tissues than is inevitably produced by powerful manipulation with forceps, or by turning the ends of the bone out of the wound, in the attempt to engage the fragments in shoehorn fashion. It should be readily adaptable to any ordinary type of operating table.

The suggestion is not made that this apparatus should take the place of preliminary extension by ordinary methods, but the frame offers certain facilities for operative work, particularly in the case of malunited fractures with muscular retraction. Under such circumstances it is simple and positive in use. The extension is applied through the medium of a leather anklet, which is attached by a hook to a flexible steel cable. Where it is desired to maintain only a moderate degree of extension to enable the limb to be encased in plaster, the anklet may be made of coarse flannel, this being incorporated in the splint. Counter extension is provided by a perineal post or by perineal bands attached to the head of the table. The apparatus consists of the usual zinc top mounted upon a frame which is attached to the foot of the operating table. In the case of the Quadrant Model table, the traction frame has been made of sufficient length to temporarily replace the normal leg-rest. The mechanical extension is by screw gear controlled by a crank at the far end. The cable passes over two pulleys and it is so guarded that it cannot leave the wheels when in action. The end of the cable is fixed to a slide block working on an endless screw. The complete gear is carried on parallel tubular bearings to afford sufficient lateral adjustment for a direct pull on either leg. Ratchet wheel or other retaining device is not required since no degree of tension will cause the crank to unwind when released from the hand; this retains its position until deliberately reversed. The whole of the gear is so arranged that it is situated under or at the far end of the table. The legs which are adjustable for height are made to fold and the perineal post is detachable.



The traction frame folded.

The frame is made by Messrs. Down Bros., St. Thomas's-street, London, S.E.

NORMAN FLOWER, M.B., B.Ch. Oxf.

THE LANCET.

LONDON, SATURDAY, JUNE 7, 1930

MEDICAL STUDENTS FROM THE UNITED STATES.

THREE documents are appended to the report of the proceedings of the General Medical Council which will be found elsewhere; they deal with the delicate position which has been created, especially during the last two or three years, by the applications from the United States for admission to British medical schools, with the consequent intention to obtain British medical qualifications. The matter was briefly referred to by Sir DONALD MACALISTER in his opening address to the Council, when that body was warned by the President that in some cases the number of these applications exceeded the number of those made at home, thus compelling the Council to look carefully into the educational standards of the applicants lest they should be inferior to those required from British students. The Council accordingly set up a Colonial and Foreign Students' Committee, and from the report of that Committee, which includes memoranda from Sir NORMAN WALKER and the REGISTRAR of the Council, the difficulties of the position will be perceived; and these are so real that the expressions of good will on both sides are particularly welcome.

The American students who are seeking in Great Britain opportunities for education and qualification include those who propose to take the whole of their instruction on this side of the Atlantic and those who desire post-graduate courses. In neither of these cases does any difficulty arise: post-graduate work can be done by all medical graduates, and the only certificate that would be required of the American graduate desiring to go through the complete British curriculum would be one to show that he or she was over 17 years of age upon entrance. But there are two other classes of American students where there is considerable difficulty, and it is from one or other of these classes that nearly all the applications have been received. There are, first, those who having started in an American medical school have failed to maintain their foothold there for various reasons; and, secondly, those who, having completed the American curriculum up to a certain point, are desirous of getting credit for that work in British schools on their way to obtaining a British qualification. In both cases we have to comprehend why in the United States so many students should be unable to obtain the necessary training in their own country, leaving out of consideration those who wish to go abroad from a praiseworthy spirit of adventure. To a great extent this inability is the outcome of the laudable activity of the last few years directed to raising the standard of medical education throughout the States, by suppressing the inferior schools. These used to range from respectable institutions, having often a semi-religious background to their foundation, down to the crudest degree-shops where, in return for so many dollars and the production of a thesis (which might or might not have been written by the man who signed it) a degree in medicine or philosophy or what not could be obtained. A crusade of vigorous reform, steadily carried on in America during the last 15 years or so, has been extremely creditable to the energy of the reformers, who often have had the bitterest opposition from interested corporations or wealthy individuals. The result of this process of cleaning up has been severe pressure upon medical schools attached to the great universities, and it is from the western and middle-western centres of education that those who are unable to carry through the medical curriculum in the States look for accommodation in British institutions. Where the clinical education has not started, but a satisfactory standard from the American point of view has been reached in the ancillary subjects, the British schools are unable to ascertain exactly what that standard has been, or what any particular American high school may demand as a reasonable grounding in biology, chemistry, and physics. This information cannot be obtained categorically from a country where the examination system, as we here understand it, has no existence, yet the General Medical Council, with a certain responsibility for the instruction of British medical students in these subjects, must feel the same responsibility in relation to all students where the object is to obtain a place on the British Register. In the case of students who, having been accepted as sufficiently proficient in these ancillary subjects for admission to an American school, and who seek to continue their education in this country, the procedure is even more delicate. For these students, or many of them, have proved themselves, for this or that reason, unwanted in their American schools, being in the odd position of an honourable suspension. This curious plight is reached by a student who fails to satisfy instructors from year to year sufficiently to obtain promotion from one course of studies to another course of studies, until the position is reached when he or she cannot proceed with the curriculum. The students are examined by their teachers, promoted, deferred, or weeded out, and in the main it is those who have been much deferred who apply to the British schools.

In Sir NORMAN WALKER'S memorandum, the close of which will be found on page 1262 of this issue of THE LANCET, the extreme inconvenience which may result from this situation is set out very clearly; on the one hand, the British schools do not want to earn the reputation of taking in and qualifying those whom the American universities have found unsuitable, nor on the other hand can they continue to irritate American centres of education by providing a portal for qualification which can be entered with shorter preparation than is demanded in the United States. The brevity of the British course is one of appearance only as far as science is concerned, and is due to the pattern of the high-school examinations; but it exists, and creates a situation which has to be dealt with, as the new regulations of the English Conjoint Examination Board appear to recognise.[1] The various documents published this week by the General Medical Council show that mutual arrangement between the educational authorities of the two countries is needed, while the evidence is complete that there is every intention on both sides to reach complete accord.

[1] THE LANCET, April 19th, p. 876.

THE CHLORINATION OF WATER.

CHLORINATION has long been known as a means of deodorising sewage-polluted streams or, with more success, for sterilising drinking water. ROSCOE treated the polluted Thames with bleaching powder, but a study of the rather conflicting evidence leaves it doubtful whether he did much good. In 1905 HOUSTON arrested the development of an epidemic of typhoid in Lincoln by chlorinating the drinking water. During the late war chlorination was largely used as a means of rendering all kinds of contaminated water safe to drink, a technique being devised for the employment either of bleaching powder or liquid chlorine. Since that time chlorination has passed into the routine of many water undertakings, and the shortcomings of the process have been revealed; fortunately the appropriate remedies have in the main also been found. The vast literature of the subject has been reviewed in a conveniently brief sketch by Mr. J. H. COSTE, reprinted from the annual report[1] of the Society of Chemical Industry. From this it appears that chlorination has again been taken up as a treatment for sewage, ancillary to the main processes of purification. The original idea underlying the use of chlorine was its action as an oxidiser, combining with the hydrogen of water, and thus liberating nascent oxygen. But the use of a chemical oxidiser for sewage, when there is available the large and gratuitous supply of oxygen in the air, seems unsound; to be effective enormous quantities of reagent would be required, and the resulting hydrochloric acid might have inconvenient results. Sterilisation of crude sewage is not desirable, as it is better for biological action to reach its utmost useful degree of purification in the works rather than in the diluting stream. Chlorine has however been applied with some success in retarding anaerobic action in long sewers with few branches and a relatively slow flow, when the sewage is fresh enough to form chloro-compounds which have a small but definite sterilising action, sufficient to delay the production of unpleasant odours. Chlorine will, of course, oxidise sulphuretted hydrogen, but it does not seem economical to use it so; it is better not to let H_2S form. The dosage for deodorisation or the prevention of odour is large—up to 20 parts per million. Chlorine has also been found useful for reconditioning filter beds which have become offensive and inactive, and for sterilising final effluents. For the latter purpose the dose must be carefully regulated, or the fish which it is desired to protect from sewage may be killed by chlorine. Judicious use of chlorine may enable sewage works which are reaching their limit of capacity to carry on without extension.

The dose of chlorine required in the treatment of drinking water is much smaller than that used for sewage, and it may be still further kept down by letting suspended matter settle and allowing such self-purification as the capacity of the works and the through-put of water may necessitate. HOUSTON has found that previous chlorination lowers the cost of filtration, but chlorination is apt to lead to the iodoform-like taste which consumers strongly dislike and believe to be unwholesome. In the United States of America the ill-taste is ascribed to chlorphenol, and in some cases, where the staves of wooden pipes have been creosoted or washings from tarred roads get into streams, this ascription may be sound. B. A. ADAMS has shown in our own columns that water-side plants such as willows, alders, and meadow-sweet are likely to yield salicylic derivatives to water flowing past them. Whatever their cause, tastes must be removed if consumers are to be kept contented, and means of doing this have been found. In his last report HOUSTON states that about two million people have (with intermissions due to floods) been supplied with chlorinated water since May, 1916, without any complaint. He has used ammonium sulphate to prevent the production of taste by forming chloramines, and permanganate which may be presumed to oxidise the taste-producing substances; in some cases the latter has given rise to a brown discoloration of colloidal manganese which has led to its abandonment. L. H. ENSLOW, at Toronto, has had success with sulphur dioxide; activated carbon and other sulphur-containing reducing agents have been found effective. A by-product of this work has been the discovery of means to detect and estimate free chlorine and the less active chloramines. Orthotolidine, although a favourite reagent for the purpose, cannot be regarded as specific as it gives a colour with nitrous acid similar to that produced by chlorine; the old test with potassium iodide and starch still retains its popularity. Naphthoflavone, the basis of *Chlortest* Kahlbaum, depends on the use of iodide to produce the blue colour, and seems to have no advantage over starch and iodide.

Any discussion of the action of chlorine on water would be incomplete without an allusion to the chlorination of public bath water, a practice advocated in the pioneer stage by that fearless veteran, Dr. F. W. ALEXANDER. The advantage of clear, sterile water as obtained when chlorination follows filtration, has been set out in the recent monograph[2] on swimming baths by H. T. CALVERT, J. A. GLOVER, and E. A. S. FAWCETT. Chlorination is not a panacea, and SPITTA has wisely pointed out that it should supplement, not replace, the ordinary precautions: a good source of supply and reasonable purification. Chlorination alone might lead to a sense of security which any breakdown would rudely shatter. Nevertheless chlorine appears to have a specific purifying action.

[1] Reports of the Progress of Applied Chemistry, 1929, xiv., 635.

CARE OF THE EYES IN CHILDHOOD.

WITH certain exceptions the diseases to which the eyes of children are liable are to a great extent avoidable. The exceptions are congenital defects, inherited constitutional diseases, and the ophthalmia of the new-born, the effects of which sometimes persist. Even the infective conjunctivitis which occasionally assumes epidemic form in schools could be in large measure prevented by insistence on a rigid hygiene in the matter of towels. Blepharitis is commonly conveyed to the follicles of the eyelids by dirty fingers. Phlyctenular disease, which seldom attacks well-to-do children, owes its origin to the absence of good and sufficient food. Even more important than such external conditions are those that directly affect the sight. These are mainly two, squint and myopia. Internal squint is still too frequent in children of school age, who, when tested, are found to be partially or completely amblyopic in the squinting eye. There has certainly been an improvement in this respect since the establishment of efficient medical inspection in public elementary schools, but

[2] Ministry of Health Special Report No. 32, 1929.

the mischief is often done before the age of compulsory attendance, and among the well-to-do there are still many mothers who look upon a squint as a trivial complaint out of which the child will grow. They are unaware that, unless appropriate measures are taken, by the time the child has grown out of the squint he may also have grown out of the power of using his affected eye. During the only time in his life when it is possible for him to acquire the power of correctly interpreting the images which fall upon the retina it has been impossible for him to do so, and the unused eye has become more or less blind. With regard to myopia, there are cases in which, from hereditary or unknown causes, children become highly myopic at a very early age, but these are comparatively rare, and the defect in vision is so obvious to the mother that they are not likely to remain untreated. Far commoner are cases where a child is born with a predisposition to myopia, or with an astigmatic defect which, from about the time he begins to learn to read, causes him to acquire the bad habit of excessive convergence in order to obtain clear images. The result is an abnormal lengthening of the anterior-posterior axis of the eyes which comes on insidiously. Sometimes mere stooping over lessons may induce this stretching of the eyeball, even without the excuse of astigmatism.

Mr. C. H. BRYANT, who addressed the last meeting of the Brighton and Sussex Medico-Chirurgical Society on the common-sense care of eyes, suggested that the excessive looking at picture books by young children when in the nursery stage is a responsible factor in the production of myopia. This would, we think, only be the case with those infants who have a strong hereditary predisposition to myopia, and it would be a pity to debar normal children from what is, after all, a normal means of educating both eye and brain. The habit of stooping should certainly be checked. In any case, if a child's sight should appear to be weak the eyes should be examined under a mydriatic, when any tendency to myopia would be discovered and appropriate measures taken. From this point of view the establishment of nursery schools with medical inspection is highly desirable. Careful judgment is called for on the part of the doctor in deciding whether or not the constant wearing of glasses is to be insisted on. In the case of the myope, however slight the degree of error, it is probably wise to do so, as this is the most practical method of preventing its increase. That the glasses should be worn for near work is especially important, and this should be explained to the parent who will remark that as far as the child's sight goes the glasses only improve distant vision and not near. In the case of simple hypermetropia, the constant wearing of glasses is only called for in the higher degrees where the distant as well as the near vision is improved by them. In moderate degrees where the child can easily neutralise his hypermetropia by means of his accommodation, it will be sufficient for him to wear glasses for near work or during school hours. In low degrees, or degrees which are low in relation to the age of the child, he will probably be quite as well without glasses at all. When a child's visual acuity is imperfect, and the only defect discoverable is the existence of one or two dioptres of simple hypermetropia, we judge that his accommodation is weak owing to some temporary cause connected with his general health, and it is better to have this put right rather than to prescribe glasses. In the case of astigmatism the decision is not always easy. Considerable degrees, of course, need the constant wearing of glasses and so does any degree of myopic astigmatism. In the case of low degrees of hypermetropic astigmatism, in which the acuity for distance is not materially affected, it will be sufficient in most cases to prescribe correcting glasses for near work, in order to prevent the change from hypermetropic to myopic astigmatism; but there are cases in which even low degrees of astigmatism in children cause symptoms of headache or eye-strain, and these call for the constant wearing of glasses.

Annotations.

"Ne quid nimis."

THE BIRTHDAY HONOURS.

THE following is a list of the Birthday Honours as far as they relate directly to the medical profession. No medical names are among the new peers or baronets.

Knights.

Norman Godfrey Bennett, M.B., B.Ch., L.D.S., President of the British Dental Association.

Harold Delf Gillies, C.B., F.R.C.S., Major, R.A.M.C. (retd.), Chief Plastic Surgeon to the Ministry of Pensions.

Prof. Leonard Erskine Hill, M.B., F.R.S., Hon. A.R.I.B.A., Director, Department of Applied Physiology, National Institute of Medical Research.

Thomas Eustace Hill, O.B.E., M.B., B.Sc., F.I.C., lately Medical Officer of Health in the County of Durham.

Khan Bahadur Behramji Hormasji Nanavati, C.I.E.

John Randall Phillips, O.B.E., M.B., President of the Legislative Council, Barbados.

K.C.B. (Military Division).

Surgeon Vice-Admiral Arthur Gaskell, C.B., O.B.E., F.R.C.S., D.P.H., K.H.S.

Air Vice-Marshal David Munro, C.B., C.I.E., M.B., Ch.B., F.R.C.S. (Royal Air Force, Retired).

C.M.G.

Major Gerald Joseph Keane, D.S.O., M.D., Director of Medical and Sanitary Services, Uganda Protectorate.

Herbert Chavasse Squires, M.D., Director, Khartoum Civil Hospital.

C.I.E.

Major-General Godfrey Tate, I.M.S., Surgeon-General to the Government of Bengal.

Lieut.-Colonel William Jackson Powell, I.M.S., Inspector-General of Prisons, Central Provinces.

Lieut.-Colonel Hugh Reginald Dutton, I.M.S., lately Principal, Prince of Wales' Medical College, Patna.

M.V.O.

Clifford Viney Braimbridge, F.R.C.S.

C.B.E. (Military Division).

Wing-Commander Harold Edward Whittingham, M.B., Ch.B., F.R.F.P.S. Glasgow.

O.B.E. (Military Division).

Major John Hare, M.D., F.R.F.P.S., R.A.M.C.

Lieut.-Colonel James Alfred Seymour, T.D., The Army Dental Corps.

O.B.E. (Civil Division).

John Rhodes Dickson, M.B., Deputy-Surgeon-General and Medical Inspector of Health, Colony of Trinidad and Tobago.

Lieut.-Colonel William Clayton Smales, D.S.O., R.A.M.C., Lately Medical Officer of Health, Gibraltar.

Miss Alexandrina Matilda Macphail, L.R.C.P., Superintendent, Rainy Hospital, Madras.

Hon. O.B.E.

Abdul Al, Medical Officer, Hebron.

Suleiman Saleem, Medical Officer, Jerusalem District.

These honorary distinctions were awarded for services during the disturbances in Palestine in August, 1929.

Kaisar-i-Hind Medal.

Miss Eleanor Isabel Dodson, L.S.A., in charge of the Church Missionary Society Zenana Hospital, Multan, Punjab.

Miss Alice Lucretia Ernst, M.D., in charge of the Ackerman Hoyt Memorial Hospital, Jhansi, United Provinces.

Miss Margaret Mitchell Paterson, M.B., Scotch Mission Hospital, Sialkot, India.

John Edward Sandilands, *M.C.*, M.D., D.P.H., lately Health Officer, Bombay Municipality (posthumously).

Hassan Suhrawardy, O.B.E., M.D., F.R.C.S., Chief Medical Officer, Eastern Bengal Railway.

The following names will be recognised with pleasure in the Birthday Honours, as their owners have worked in relation to medicine in one capacity or another. Among the knights will be found the names of Prof. J. Arthur Thomson, Regius professor in natural history at Aberdeen, and Prof. A. S. Eddington, the famous astronomer. Miss Margaret McMillan has been made a Companion of Honour for services to the nursery school movement. In the Order of the British Empire, Miss Wilhelmine Walker, principal matron of Queen Alexandra's Imperial Military Nursing Service, receives the military O.B.E., while the civil O.B.E. has been awarded to Miss Emily MacManus, matron of Guy's Hospital; to Captain A. G. Elliott, secretary of the London Hospital; and to Mr. Russell Paton, organising secretary of the Royal Infirmary, Edinburgh. The Royal Red Cross of the first class has been awarded to Miss Agatha Mary Phillips, principal matron of Queen Alexandra's Imperial Military Nursing Service, and to Miss Katherine Christie Watt, matron of Princess Mary's R.A.F. Nursing Service. In the same service Miss Esther Wilson Hunter receives the Royal Red Cross of the second class.

REPORT ON THE LÜBECK DISASTER.

Prof. Bruno Lange's report to the German Health Office has appeared [1] with commendable promptitude in order to prevent (in the Elizabethan sense) hasty judgments on a distressing situation. It emanates from the Institute Robert Koch in Berlin with the added authority of Prof. Ludwig Lange. Up to the date on which the report was written 14 deaths had occurred at Lübeck in causal relation with the administration of B C G vaccine; four deaths among this group of infants were due to other causes. Clinically and pathologically the picture was typical of tuberculosis acquired through the digestive tract with generalisation in the internal organs, the portal of entry being the pharynx, nasopharynx, or intestine. Prof. Lange comments on the remarkably short incubation period, about four weeks, death following vaccination within a period of two months; further deaths must be expected for a month or so, as the vaccine was given until the end of April, and it is the administration during March that accounts for the fatal cases so far reported. These cannot be debited to a particular batch of vaccine prepared on a particular day; every batch was alike in its result. If some individual child escaped, this is to be attributed not to the vaccine but to the exceptional resistance of that child or to the accident of the vaccine having been vomited or (conceivably) not having been taken. The mortality was due, Prof. Lange does not doubt, to virulent tubercle bacilli abundantly present in the vaccine. How they got there he cannot say, nor does he hold out much prospect of being able to say, for the original material from the Pasteur Institute as well as the first subcultures are no longer available. A striking feature of Prof. Lange's report is the short work he makes of the supposition that the harmless bacteria in B C G vaccine have regained their original virulence. The experiments which led Pirquet to give up the Calmette method were based on guinea-pigs which were made ill by the injection of very large doses of B C G culture. Petroff's belief that he was able to cultivate virulent bacilli from B C G culture colonies was, he thinks, invalid; the same colonies examined at the Koch Institute showed tubercle bacilli of human type—evidently a contamination, for bovine bacilli are never transmuted into human. The Institute has never been able to detect the slightest enhancement of virulence in many hundreds of vaccinated guinea-pigs, and its series of autopsies on lambs inoculated immediately after birth which showed no trace of the spread of tuberculosis. Isolated records of death in the literature are regarded as equally unconvincing. On this survey of his own work and of similar work elsewhere Prof. Lange rules out the possibility at Lübeck of a spontaneous conversion of harmless into pathogenic form of B C G. This assurance is in harmony with the Belgian report [2] of massive doses of B C G vaccine administered subcutaneously to pregnant guinea-pigs without affecting mortality or development of offspring. But convinced as he is of the harmlessness of B C G Prof. Lange has no illusions as to its proved value. Opinion in Germany is not so optimistic as in France and does not find in the French statistics material for a trustworthy judgment. The protective action of the vaccine in guinea-pigs, rabbits, and monkeys has proved to be very limited, indeed hardly appreciable after oral administration. Whether appreciable success is to be obtained in man is still, he thinks, in doubt; but, he adds, "the slight addition to resistance which we can give to the human subject by means of an immunising dose will in all probability make itself more obvious the higher the grade of natural resistance which the inoculated person possesses." This it is that justifies a test of the Calmette method under State control, the cultures being prepared only in large special laboratories. In the fight against tuberculosis, the report concludes, we cannot afford to discard a remedy in itself harmless from which any result is to be expected.

[1] Deut. Med. Woch., May 30th, p. 927.

THE PRESERVATIVE ACTION OF ARSENIC.

THE discovery of arsenic in the bodies of persons who have been poisoned by it after long periods of interment is a well-established fact. The same is true of antimony and in a less degree of other toxic elements. In the tissues generally it is comparatively easy to discover arsenic in such cases, although it may not be found in the chemical form in which it was administered during life, in the alimentary canal especially, owing to the interaction of sulphuretted hydrogen generated during decomposition. Some of it will be in the form of sulphides. In some recorded cases the preservative effect on the tissues was easy to observe. An early instance, narrated in the Annual Register of the Year, 1829, has been brought to our notice by Mr. W. H. Woodzell, of Plymouth. The case occurred at Lyons in 1822, and the facts are briefly these. Suspicion having arisen that death was due to poison administered by the dead man's daughter, two physicians of Lyons, Drs. Ozinam and Ide, were instructed in 1829 by the legal authorities to disinter the body and make an analysis of the remains. Orfila, the famous French chemist, had previously been asked if a body removed from the grave, after the lapse of such a time as seven years, could possibly afford proof of poison having been administered, and, if so, in what manner an investigation was to be conducted. His opinion in reply was that although the body would probably already be reduced to ashes, nevertheless, if a blackish deposit should be found at the sides of the spinal column, chiefly in the dorsal and lumbar regions, it might be analysed in the manner described in his works on toxicology. The coffin containing the remains was entire. It was composed of thick planks of fir or pine, which internally were found to be quite dry. On exposure of its contents, the body was recognised by the priest, by the gravedigger, and by some of the National Guard who had assisted at the

[2] Nelis, P.: Bull. de l'Off. Internat., d'Hyg. pub. April, 1930, p. 729.

interment and had fired over the grave. It was identified by the hair which yet remained and by the teeth, all of which were still in their sockets except one which had been lost during life. Head, trunk, and limbs were entire, so that the stature could be measured. The chest had fallen in and the heart and lung tissues had become blended together, presenting the appearance of a dark oleaginous substance. The whole was without smell. The entire trunk was then removed—the head and extremities being regarded as unnecessary to the investigation. The portion reserved for examination weighed nine pounds, of which two pounds were set aside for a second set of experiments lest those made on the first should prove unsatisfactory. In the investigation, Drs. Ozinam and Ide proceeded on the supposition that arsenic was the poison.

The matter was first boiled, and the fluid therefrom evaporated to dryness, the residuum thus obtained being dissolved in distilled water. This produced a deep-coloured liquid which, treated with chlorine, was but imperfectly deprived of its colour. The distilled water charged with this extract from the remains was again evaporated to dryness, and four ounces of potassium nitrate, placed in a matras, were exposed on ignited charcoal. The suspected matter well-dried and after rolling it into little portions, was introduced. Each time this was done a deflagration was produced and perceived. It was now allowed to cool and the residue was again dissolved in distilled water. This resulting solution was now saturated with nitric acid and afterwards subjected to the usual reagents, all of which indicated the presence of arsenic. Some small portions were treated with vegetable charcoal introduced into a glass tube and then heated. This gave off aqueous vapour at first, soon after which small grey-coloured and brilliant points were seen. A grain of metallic arsenic was thus obtained. Another portion treated with hydro-sulphuric acid furnished sulphuret of arsenic and this, when heated and acted upon by caustic potash, afforded a portion of shining matter which was easily dissolved in distilled water by directing upon it a current of oxygen gas.

By these various experiments the fact of a considerable quantity of arsenic having been administered seven years earlier was demonstrated. From the ability of witnesses to recognise the features after seven years' burial it is clear that the preservative effect of the arsenic had been remarkable. Since that time other cases have established this effect, which has long been recognised by medico-legal writers. Instances are given in the text-books of Dixon Mann and R. J. M. Buchanan, while J. Glaister cites in detail the appearance of the victims of Flannagan and Higgins who were tried at Liverpool in 1884. By reason of arsenical poisoning having been established in one of the three victims, the bodies of two others—Mary Higgins, aged 10, and John Flannagan, aged 24—were exhumed and examined. Although the body of the former had been buried for about 13½ months, and that of the latter for 37½ months, both were found to be in an excellent state of preservation: indeed, in the case of John Flannagan, the face and body generally could easily be identified. The abdominal organs of Mary Higgins were found on analysis to contain one grain, and those of John Flannagan, 3¼ grains of arsenious acid. Another noteworthy appearance found after burial in the stomach and intestines of the bodies of those to whom arsenic has been administered and which, moreover, was also observed in the bodies of the above-named individuals, is a golden-yellow pigment or coating of the mucous membrane. It has been contested whether this yellow pigment is composed of arsenic sulphide or of yellow bile-pigment. Campbell Brown and Davies analysed the pigment in these cases and found that it did not contain any appreciable amount of arsenic, but chiefly consisted of bile-pigment. On the other hand, Littlejohn and Drinkwater have recorded two cases of poisoning with arsenious acid in which the yellow sulphide was found in the alimentary canal. Like preservative effects on the bodies of victims of poisoning by antimony are also well established. The account of the exhumed bodies in the Chapman or Klosowski case in London (1903) by the late Sir Thomas Stevenson, abundantly shows this. Similar effects had been previously noted in the case of Palmer in 1856, and also that of Captain Caw poisoned by his son-in-law in New Zealand.

A RECEPTION BY THE ROYAL SOCIETY OF MEDICINE.

A WELL-ATTENDED reception was held by the Royal Society of Medicine on May 29th, when Lord Dawson, as President of the society, received the guests with Lady Dawson. In the course of the evening two films were shown; the first, "Turksib," was a Russian picture showing the construction of a railway in Turkestan. This, like other Russian films which have reached this country, was an artistic and clever production. The railway was presented as almost finished, for it was due to be completed in 1930, as the audience was repeatedly told; but in actual fact it is still, we understand, in an early stage of development, and will most certainly not be finished this year. It was interesting to notice that the big machinery being used in the construction was English; also that sheep, cattle, and horses have been imported from England to stock the country through which the railway is to run. The second film was an amusing comedy, entitled "Habeas Corpus," and provided a pleasant contrast to the more serious picture. The popularity of these social evenings has increased to such an extent that many applications for cards have to be refused for lack of accommodation. It is a tribute to the attractions offered by the society that this is true at the very height of the London season.

THE VIRUS OF PSITTACOSIS.

THE claim that certain of the so-called filtrable viruses can be demonstrated by the current microscopical methods is no new one. The bodies described by Paschen, Borrel, and others in virulent vaccinia material are, perhaps, the best known example, but similar appearances have been observed in connexion with other members of the group, such as the viruses of fowl-pox, influenza, poliomyelitis, and dengue. Opinion is sharply divided on the nature of these bodies. They are not easily stained, and do not reveal themselves to casual or haphazard study, which probably accounts for the lack of attention which they have received, many investigators having dismissed them after a cursory examination as precipitate of stain or protein. Nevertheless the view that they are the viruses is held by many whose opinion is entitled to respect. Recently bodies of a somewhat similar nature have been described in connexion with the virus of psittacosis. These appear most commonly as small cocci, 0·2 μ–0·4 μ in diameter, single or in pairs, but occasional bacillary forms are met with which may be as much as 2 μ in length. They are readily demonstrated by prolonged staining with Giemsa, but can be stained, though less well, with Löffler's methylene-blue or carbol fuchsin. Levinthal,[1] who was the first to describe them, does not commit himself on their relationship to other virus bodies, though he does throw out a hint of the possibility of the virus of psittacosis being a member of the Brucella group; apparently he considers these bodies to be the virus. Both Coles [2] and Lillie,[3] whose papers closely followed that of Levinthal, incline to the view that these bodies belong to the rickettsias; in fact, the latter author goes so far as to coin the name *Rickettsia psittaci*. Undoubtedly there are strong resemblances with the rickettsias. The presence of bacillary forms, the appearance of the coccal and bacillary forms when stained by Giemsa, their occurrence in masses inside endothelial phagocytes, and the fact that they are Gram-negative,

[1] Levinthal, W.: Klin. Woch., 1930, ix., 654.
[2] Coles, A. C.: THE LANCET, May 10th, p. 1011.
[3] Lillie, R. D.: U.S. Pub. Health Rep., 1930, xlv., 773.

are all points in favour of this relationship. Then, again, the fact that almost everyone who has studied the virus of psittacosis has seen these bodies suggests that they are something more definite and more readily demonstrated than the Paschen and other virus bodies. Whether this minute cocco-bacillus is the virus of psittacosis remains to be demonstrated, but its constant presence in virulent material, whether coming from man, birds, or mice, makes this more than a remote possibility.

THE TRAINING OF THE DEAF.

THOSE who attended the meeting of the National Institute for Promoting the Welfare of the Deaf which took place last week and to which we elsewhere make reference, had the good fortune to hear from Mr. Stanley Baldwin a very clear exposition of the trials of the large number of people who have lost their sense of hearing. Mr. Baldwin, in a studiously simple address, confined attention to the unsympathetic attitude which the public, through a sort of unheeding ignorance, manifests towards the deaf population, contrasting that attitude with the prompt and deep commiseration which is always extended to the blind. The situation which was described is one of which medical men are becoming increasingly aware, for many doctors are now realising how much can be done for the deaf by classification and suitable education, where full advantage can be taken of the proper training. They will recognise the good sense of Mr. Baldwin's words by as much as they have recognised the possibilities for good work and good citizenship possessed by a large proportion of the deaf. The plight of these is undoubtedly aggravated by the thoughtlessness of those with whom they mix, but the capacities of the deaf require development by methods of education that are hard to come by, and for the provision of which the aid of the State is needed. Expressions of official sympathy have now been received from the relevant Ministers of State under two administrations, and while there is reason to hope that the untiring work of the National Institute will soon bear fruit, towards this end Mr. Baldwin's words of wisdom will play an influential part. By making little organised attempt to train the deaf the State is on the one hand doing little to ease a burden which the country has to bear, and on the other is leaving undeveloped the capacities of a large number of persons perfectly fitted, if only they can be equipped, to help themselves and help others.

THE OBJECT OF A PHARMACOPŒIA.

IN a presidential address to the United States Pharmacopœial Convention, delivered on May 13th, Dr. Reid Hunt quoted from the founders of the U.S.P. in 1820: "It is the object of a Pharmacopœia to select from among substances which have medicinal power those the utility of which is most fully established and best understood; and to form from them preparations and compositions in which their powers may be exerted to the greatest advantage." He suggested how far it was possible to stray from this ideal by recalling the words of another president of the Convention, who had remarked that there were preparations in the U.S.P. no more active or useful than brickdust; and that doubtless brickdust would also be included if a demand for it arose. But though useless drugs or preparations which enjoy a temporary vogue may encumber the Pharmacopœia, they can always be removed by judicial editing; on the other hand, the full value of remedies long known to pharmacologists and doctors may often escape investigation for years. Dr. Hunt cited ether as an example, which was known for nearly 300 years before its anæsthetic use was discovered, and Epsom salt, recognised by the medical profession since 1694, but never examined as an intravenous injection until 1905. The use of carbolic acid as an operative disinfectant by Lister, which was to lead indirectly to the development of aseptic surgery, was suggested to him by observing its action at a Scottish sewage plant—a haphazard origin for a revolution in surgical technique. The moral Dr. Hunt draws from these instances is the need for the rational use of experiment to investigate completely the properties of drugs at present recognised, many of which are still given empirically. The use of anæsthetics once believed to be impossible is now beginning to extend, with the safety and efficiency afforded by modern technique; but Dr. Hunt reproaches surgeons with treating the subject of anæsthesia as though it were a closed chapter, whereas he questions "if man has even got on the right track in regard to general anæsthesia." The effective anæsthetic dose of the substances in use is more than 50 per cent. of the fatal dose—a smaller margin of safety than with any other class of important drugs. And in this view Sir Francis Shipway is in accord, for in a letter on another page of our present issue he describes the position of surgical anæsthesia as very unsatisfactory, and calls for search after an agent which will eliminate the fear of going under, provide a safe induction, and avoid the later complications, whether toxic or irritant. Dr. Hunt holds it probable that in other directions some of the drugs at present in common use have equally far-reaching potentialities. Ehrlich, who combined an encyclopædic knowledge of pharmacology and of organic chemistry, believed that the future of medicine lay in pharmacology. His many contributions to the science were made as the result of patient experiment. The introduction of almost every modern drug into medicine has depended on pharmacological experiments; further, the use of synthetic drugs is rapidly increasing, and to this field of activity it is impossible to imagine a limit. In 1835 Bigelow placed epilepsy and angina pectoris among the "self-limited diseases," declaring that their paroxysms could be neither "foreseen, prevented, nor, as far as we know, materially abridged in their duration." Dr. Hunt referred to the value of the bromides and amyl nitrite, since employed in these two conditions, and mentioned the extreme specificity of action of certain drugs. The destruction of a few cells of the retina, only, by methyl alcohol poisoning was remarkably suggestive; there were possibly a vast number of known but untested compounds which might have a similar effect upon the cancer cells. We have no right to consider any disease "self-limited," or to think it essential to discover the cause before attempting the cure. But, as Dr. Hunt pointed out, "at the present rate of progress it would require not only decades but centuries, perhaps a millenium, for the medical profession to examine what the chemists already have to offer." He left a stimulating impression that no time should be lost in setting about the task.

ROAD ACCIDENTS.

THE harm that is often caused in accident cases on the roads by well-meant but misguided zeal on the part of the public is the subject of a letter addressed to the *Times* of May 28th by the Director of the Home Ambulance Service of the British Red Cross. This applies in particular to cases with fractures of the limb bones; examples are given of patients with a fractured femur taken to hospital in the back seat of tiny cars, and others of simple fracture becoming compound after transport in a lorry without splintage. The British Red Cross Society has done a great deal to minimise the results of the increasing number of road accidents by establishing a network of motor ambulances throughout the country, by educating the people in the principles of first-aid, and by the provision of boxes of first-aid equipment. There is, however, a real danger that the public by its endeavours to help may nullify these efforts. It cannot be too widely made known that in the majority of cases of accident on the road it is far better to

leave the injured person at rest, provided he is kept warm, until a doctor or an ambulance arrives, than to hurry him to hospital without skilled attention to his injured limb. One of the most striking lessons of the war from a surgical point of view was the importance of adequate immobilisation of a fractured limb during transport, and indeed throughout the course of its treatment. That lesson took a long time to learn, and it is now in danger of being forgotten. Its importance applies not only to the transport of the accident case to hospital, but also to the treatment offered on arrival there, where mistaken efforts to clean and comfort the patient by removal of clothing and boots too often produces considerable increase both in local injury and general shock. The new order to London police, by which all detectives up to the rank of first-class sergeant, and all uniformed officers up to the rank of station sergeant, are required to make themselves thoroughly proficient in methods of first-aid, having to obtain a certificate equivalent to that held by members of the St. John's Ambulance Brigade, will do much towards helping the patient who has had a road accident. In spite of the good work of the Automobile Association and Royal Automobile Club, however, there are still too few wayside telephone stations. The provision of these in increased number and the spread of teaching that the best way to help in a road accident is to telephone for a doctor and an ambulance and to be content to keep the patient warm and quiet until their arrival, should do much to minimise the consequences of accidents.

AN INTERNATIONAL CONFERENCE ON MINERS' PHTHISIS.

IT is common knowledge that the organisation of methods to prevent and diagnose silicosis and to estimate the damage sustained by any individual afflicted with it is far more elaborate on the Rand than at any other place in the world. Following a suggestion made by the Transvaal Chamber of Mines and with the generous assistance of this Chamber, the International Labour Office is therefore convening a conference of experts on silicosis to be held in Johannesburg in August of this year. Those taking part will include, besides the men who have acquired unparalleled experience in coping with miners' phthisis in the gold-mines of the Rand, delegates from Australia, Belgium, Canada, Germany, Great Britain, Italy, the Netherlands, and the United States. The conference, which will be under the official patronage of the South African Government, will open on August 13th and will conclude on August 27th. One delegate from each of the countries represented will be asked to prepare a short statement explaining the situation in his country as regards silicosis and closely related dust diseases, the researches made and the results achieved, including particulars of compensation where it is granted. For the rest, the draft programme consists mainly of communications from workers on the Rand, whose papers will be printed and distributed in advance, so that visitors from other countries will be in a position to comment on the information provided and critically examine the statistics and the material collected in South Africa. The communications to the conference will include a historical review of mining conditions on the Witwatersrand from the point of view of dust and ventilation Mr. Hans Pirow, D.Sc., government mining engineer, Mr. A. E. Payne, general manager of one of the mines, and Mr. F. G. A. Roberts, technical adviser to the Transvaal Chamber of Mines, will describe the conditions in the mines in the early days of the Rand and the changes which have since taken place. Mr. A. F. Macewen and Mr. J. Buist will discuss the nature and source of dust in mine air, Mr. James Boyd will give an account of methods for the determination of the amount of dust in mine air, and Mr. Malcolm Fergusson, chief inspector of mines, and Mr. Walter Scott will describe methods for preventing the formation of dust and precautions designed to prevent the inhalation of such dust as may be formed, with the regulations designed to this end. Prof. G. A. Watermeyer and Mr. J. P. Rees will discuss the general question of mine ventilation and air renewal, including references to the heat and humidity problems. The medical aspect of miners' phthisis will be dealt with first by Dr. L. G. Irvine, who will describe the functions and working of the Miners' Phthisis Medical Bureau, over which he presides. Dr. A. Mavrogordato will discuss the ætiology of silicosis and its experimental production, Dr. A. Sutherland Strachan and Dr. F. W. Simson its pathology, and other members of the South African Institute for Medical Research will expound the symptomatology and radiology of silicosis as it affects South African gold-miners. Dr. A. I. Girdwood will describe the medical examination of native labourers on engagement, with a demonstration, and Dr. A. D. Pringle the sanatorium treatment of miners' phthisis. Dr. Andrew H. Watt will speak of silicosis as seen in the days before the establishment of the Miners' Phthisis Bureau. The statistics collected in connexion with the work of this Bureau will be reviewed, also the functions and experience of the Medical Board appointed to hear appeals from its decisions, and the efforts made to provide employment for the sufferers from silicosis and for their dependents. Visits to mines and demonstrations of material and radiograms will be arranged, and the last few days of the conference will be devoted to round-table discussion of questions arising from the previous sessions. The Rand gold-mining industry must inevitably come to an end after a few more decades, since all the reef near enough to the surface to be mined with profit will have been extracted. It would have been most unfortunate if the experience so expensively gained had not been put at the disposal of other nations whose industries include those involving the risk of silicosis, and the idea of convening a conference while the organisation is still at its zenith was a happy one which should have fruitful results.

INDICATIONS FOR MASTOID ANTROTOMY.

THERE is an increasing inclination among otologists to perform the mastoid operation in the later stages of an acute suppurative otitis media. When, somewhere about the fourth week of the disease, a profuse purulent discharge continues without signs of diminution, the majority of aural surgeons now advise antrotomy, even in the absence of other local or general symptoms. If treated conservatively, such cases usually go on to chronic suppuration or, at best, to a scarred fibrosed tympanum and impaired hearing; on the other hand, after the mastoid operation, a soundly healed drum and perfect, or nearly perfect, hearing may be expected. It is surprising what extensive disease may be found under these circumstances, despite the absence of symptoms, though it is possible that careful examination may reveal a fleeting rise of temperature, or a, perhaps very slight, bulging of the postero-superior wall of the meatus. Such is the opinion of Prof. Gustav Alexander, who has recently contributed an interesting exposition [1] of his views of the indications for operation in acute otitis. In the early stage of acute aural suppuration, on the other hand, opinion is hardening against operation. Prof. S. J. Kopetzky, of New York, whose work on "Otologic Surgery" was reviewed in our columns on March 15th (p. 577), believes that the danger of extension to the lateral sinus is increased by operation within the first three days, and that the best results are obtained if operation is performed at the end of this period. Prof. Alexander has long been convinced that the subsequent course of an otitis media is unsatisfactory when the mastoid has been opened in the first week of the disease. In

[1] Wien. klin. Woch., May 8th, p. 577.

his opinion the surgical form of mastoiditis makes its appearance in the third week, just at the time when, in the normal course, the otitis should have healed. He states categorically that there is no such thing as otitis and meningitis beginning simultaneously, and that sinus-thrombosis, like other intracranial complications, occurs at the earliest at the end of the third week. It is true that the duration of the otitis may occasionally appear to be shorter but, on careful inquiry into the history of pain in the neck, or feeling of fullness in the ear, before the onset of actual earache, one finds that the case is really one of otitis in its third week. But, Prof. Alexander maintains, acute otitis produces no genuine complications in the first few days; in severe cases, especially in children, there often appears in the early stage, while the drum is still intact, or before a profuse unobstructed flow of pus has followed paracentesis or spontaneous rupture, a series of symptoms—acute mastoid pain and tenderness with high fever—which imitates, but is distinct from, surgical mastoiditis. This condition is distinguished by the absence of the signs of true mastoiditis; in the latter the soft parts over the mastoid are diffusely thickened, less movable, and warmer than on the opposite side, the tip is obscured by œdema and, above all, there is bulging of the posterior-superior meatal wall. He terms this condition "mastoidismus," but, as he acknowledges that the symptoms are due to an underlying inflammation, the word is open to criticism; it may be better to agree that the mastoid antrum and cells participate in the inflammation of a severe otitis in the early stage. The fact remains that these symptoms disappear when free discharge from the ear is established, that such cases do badly if the mastoid is opened at this stage, and therefore that no operation should be performed beyond incision of the drum-membrane when perforation is absent or insufficient.

THE RESEARCH DEFENCE SOCIETY.

THE report of the Committee of the Research Defence Society is a brief document, reflecting there the fact that the business of the year has been relatively quiet, in spite of the large increase in the numbers of Members of Parliament and public persons whom we hear of as being opposed to the work of the Society. There has been an increasing demand for lecturers and speakers for debates, and a large amount of literature, expounding the benefits to mankind and to animals as well resulting from research, has been distributed gratuitously to the public. But there is one point which emerges from the report which should be brought to the attention of our readers and that is the difficult financial position of the Society. Increased expenditure on publicity has meant, and must mean, a depletion of funds unless the propaganda meets with an increasing number of subscribers. This Society exists for the benefit of the public, its object being to defend medical and scientific research in order that the public may receive benefits therefrom. The attacks of the opponents of scientific progress are directed, of course, not against laymen, whose particular proclivities may not be known, but against the medical profession and institutions like the Medical Research Council. It is therefore particularly to the medical profession that the committee appeal for members, feeling that from this quarter full support should be given to their energies. The support given is disappointing.

At the annual meeting of the Society, held at the rooms of the Medical Society of London on June 3rd, Lord Lamington presiding, Sir Leonard Rogers, as honorary treasurer, pointed out that during the last four years expenditure had exceeded income by over £400. Mrs. May Mellanby delivered the fourth Stephen Paget memorial lecture on "Diet and Dental Disease: what we have learned from Animal Experiments." She showed that all fundamental facts upon which current hypotheses concerning correct feeding had been based were discovered by animal experimentation. The average human being in this country was fed, especially during childhood, on just those diets which had been found to produce defective teeth and defects in related tissues in animals—i.e., large amounts of cereals, with comparatively little whole milk, egg yolk, and other foods which contained fat-soluble vitamins. The profession was now aware of some of the worst errors committed in feeding, and in feeding children especially, and so long as these errors were persisted in, so long, she submitted, would the teeth of civilised man remain in their present deplorable state. In the course of the discussion Col. F. E. Fremantle, M.P., said that he had asked the Minister of Education in the House of Commons whether he would bring to the notice of children in schools the researches of Mrs. Mellanby, and the reply was a copy of the handbook issued on diet. He suggested that this handbook might require some modification in view of recent researches, and Mrs. Mellanby concurred. The difficulty in regard to public propaganda at the present time was that much appeared in the lay press which was untrue, and that made it even more difficult for those who had not scientific habits of thought to discern the accepted facts. She might have added that even in scientific circles there is not yet agreement on the theoretical significance of dietary experiments and still less on the precise way in which their lessons could be translated in didactic advice in handbooks. It is just at this stage that the patient work of a body like the Research Defence Society, whose sole object is to impress the public with the need of further experimental research, is valuable. Its work is neither pleasant nor easy, and should not be further hampered by lack of financial support.

IT is announced that the Rockefeller Foundation has offered £100,000 to the University of Sydney for provision of laboratory facilities in the departments of surgery, pathology, bacteriology, and allied subjects.

THE Cavendish lecture of the West London Medico-Chirurgical Society will be given at 8.15 P.M. on Tuesday, June 17th, by Prof. Fritz de Quervain, of Berne, who will speak on Cretinism and its Relation to Thyroid Physiology.

THE Croonian lectures will be delivered at the Royal College of Physicians of London at 5 P.M. on June 12th, 17th, and 19th, by Sir Charles Martin, F.R.S., Director of the Lister Institute. His subject will be the Thermal Adjustment of Man to External Conditions, more particularly those pertaining to Warm Countries. Members of the medical profession will be admitted on presentation of their cards.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—Courses have been arranged in the following subjects: Gynæcology, at the Chelsea Hospital for Women, certain mornings and afternoons from June 16th to 28th; dermatology, at the Hospital for Diseases of the Skin, Blackfriars, each afternoon, between same dates; medicine, surgery and the specialties, daily, 10.30 A.M. to 5.30 P.M., between same dates; proctology, at St. Mark's Hospital, City-road, daily, from June 30th to July 3rd. Detailed syllabuses of all courses can be had from the Fellowship at 1, Wimpole-street, London, W. 1.

LONDON TEMPERANCE HOSPITAL. — Re-building operations have been begun at this hospital. Four additional storeys will be added to the out-patients' department, and the pathological and massage departments will be housed in better quarters. There will also be a new radiological department, a lecture room, private wards for paying patients, and new quarters for nurses. The cost of rebuilding will be £45,000, towards which £11,000 is in hand or promised. During the week ending May 31st, 21 new in-patients were admitted and over 1340 attendances were made at the out-patients' departments.

The Clinical Interpretation of Aids to Diagnosis.

A Series of Special Articles Contributed by Invitation.

LXXV.—CHEMICAL TESTS OF PANCREATIC EFFICIENCY.

PART I.*

As in the case of the kidneys (see THE LANCET, 1928, ii., 1092) certain general principles must be considered when testing the functional efficiency of the organ. The tests yield abnormal results only when the disease of the organ is extensive. The gland possesses a large "reserve power" and in interpreting the results of tests the possible influence of non-pancreatic factors must be considered, and in particular the likelihood of coincident disease of the liver or bile-passages.

Functions of the Pancreas.

The functions of the pancreas include (1) the formation of the internal secretion ("endogenous insulin"), and (2) the formation of the external secretion (pancreatic juice), which contains enzymes (or zymogens) acting on each of the three classes of foodstuffs—viz., amylase or diastase (carbohydrates), trypsin (proteins), and lipase or steapsin (fats). It is difficult to examine these secretions because of the inaccessibility of the gland; examinations must of necessity be conducted on the duodenal contents, gastric contents, fæces, blood, or urine.

Tests of Deficiency of Internal Secretion.

Hyperglycæmia and glycosuria.—Glycosuria is uncommon in diseases involving the pancreas as a whole, and particularly in chronic lesions. In acute hæmorrhagic pancreatitis, slight transient glycosuria and hyperglycæmia are fairly often found and are valuable in diagnosis, but there is rarely time to make estimations of blood-sugar. In chronic diseases of the pancreas, it is worth while to obtain data for a blood-sugar curve, but the result is often within normal limits, because hyperglycæmia does not occur till a very large proportion of the islets of Langerhans is damaged. A normal curve, therefore, does not exclude pancreatic disease, and when an abnormal curve is obtained it is necessary to consider the possible influence of other factors.

Loewi's test.—The pupils of both eyes are carefully examined, noting their size and their reaction to light and accommodation. Two drops of 1 in 1000 adrenaline are instilled into one eye, the other being left untreated for comparison. The pupil of the treated eye is examined at intervals of about 15 minutes for the next hour, and compared with that of the untreated eye. Normally the adrenaline causes no change in the pupil. The reaction is positive if the pupil dilates. In positive cases the pupil is often oval and the dilatation eccentric. Several attempts to explain this observation have been made, of which two may be noted: (1) The "hypoinsulinism" produces a relative hyperadrenalism which increases the sensitivity of the sympathetic system, wherefore the pupil reacts to the instillation of adrenaline. (2) Inflammation of the pancreas causes irritation of the solar plexus, wherefore the autonomic system is hypersensitive.

The test is not specific because positive results have been obtained in hyperthyroidism, and in diseases of the gall-bladder or of the bile-duct. The latter observation might be "explained" on the basis of coincident pancreatic disease, but obviously limits the clinical value of the test. Negative results have been obtained in typical examples of acute pancreatitis. Some writers speak highly of the reaction in acute disease, others have discarded the test. It is so simple that it is worth performing in parallel with other tests, so long as its limitations are remembered. It is very rarely positive in diabetes mellitus.

Tests of Deficiency of External Secretion.

Theoretically tests might be applied for the different enzymes, or evidence might be sought of incomplete digestion of foodstuffs owing to deficiency of these enzymes. Examination of gastric contents, of duodenal contents, of fæces, of blood or of urine might be utilised. In practice many of these points of attack are of limited or no value, as will readily be understood if the presence of other enzymes in the alimentary tract, the action of bacteria, the influence of diarrhœa, and so forth are remembered. It is convenient to discuss the methods under the heading of each enzyme in turn.

Carbohydrate-splitting ferment.—Examinations of gastric or duodenal contents are useless owing to the presence of salivary ptyalin. Examination of the fæces has also proved disappointing, owing to the action of bacteria, or the presence of diarrhœa. Estimation of diastase in the blood is of limited value. Normally, tested by Wohlgemuth's method (see below), the blood contains 3 to 10 units of diastase. In acute pancreatic disease the amount is increased, but owing to its rapid excretion urine examination is much more satisfactory.

Estimation of diastase in urine has proved a useful test of pancreatic efficiency, although it is still not decided whether the diastase is derived solely from the pancreas. Wohlgemuth's is the method usually employed.

A Wohlgemuth unit is the amount of diastase which will digest 1 c.cm. of 0·1 per cent. soluble starch (1 mg.) in 30 minutes at 37° or 38° C. to such a degree that no blue colour is obtained on adding iodine. The diastatic index is the number of units in 1 c.cm. of urine. It is important to adjust the reaction (pH) of the urine to the optimum for the enzyme. In health the concentration of diastase in the urine, or the diastatic index, is 6·7 to 33·3 units. Occasionally when the urine is concentrated the index may rise as high as 50 units. The day's output of diastase is the product of the volume of the 24 hours' urine in cubic centimetres and the index. Normally the day's output varies from 8000 to 30,000 units.

An index of 50 is suspicious, and of 100 is almost always definitely abnormal. In acute pancreatitis values of 100, 200, and even up to 2000 may be found. In chronic pancreatitis and in carcinoma of the pancreas the diastatic index is usually normal or low, but sometimes in carcinoma the index may rise to about 100. In severe trauma of the pancreas the urine not uncommonly contains an increased concentration of diastase (up to about 200 units), and the finding of high indices in the urines of patients who have had a blow in the abdomen is useful clinically. It has been claimed that the index is often high in the toxæmias of pregnancy, and it has been suggested that the cause of this is an increased permeability of the kidney. In many cases, however, the index is normal (though rarely, if ever, low). In eclampsia indices of 50 to 100 are fairly common, and very occasionally even higher values are obtained. It is possible that these figures are mainly, if not entirely, due to oliguria. In diabetes the diastatic index is almost always normal or low.

Estimations of diastase should be made on the 24 hours' urine, except in acute pancreatitis. Normally, owing to polyuria (drinking, cold, and so on), or oliguria (sweating, restricted fluid intake), there are considerable variations in the diastatic index of specimens taken at different times of the day, though this range of variation rarely exceeds 2 to 50 units. For this reason the 24 hours' sample is employed, and when this is done the variations in different healthy individuals usually fall to the figures (between 6·7 and 33·3 units)

* Part II. will appear next week.

already indicated. In acute pancreatitis, diagnosis is so urgent that 24 hours cannot be allowed for collecting the urine, and the first obtainable sample is used. Fortunately, in genuine cases of the disease such a sample usually contains 100 or more units per 1 c.cm., but lesser concentrations of diastase are obviously not significant.

The increase of diastase in the blood and urine in pancreatic lesions may be due to obstruction of the ducts, or to increased permeability of the pancreatic cells due to inflammation. These hypotheses fit in with the clinical observation that the urinary diastase is increased when the ducts are obstructed or when inflammation is acute, and is normal or low in chronic sclerosing conditions. I. Cohen and E. C. Dodds have shown that the same variations in the diastatic index are found in starvation as after food, so that presumably diet has no influence on the output of the enzyme.

There may be a transient increase of the concentration of diastase in the urine when a salivary duct is obstructed or a salivary gland is acutely diseased, but such a cause is readily recognised from the clinical examination of the patient.

If there is a deficiency of the external secretion of the pancreas, it might be expected that a certain amount of starch might escape digestion and be recognisable in the fæces, but microscopical examination of the stools for starch granules has been found of no value as a test of pancreatic function. Starch granules are often absent in proved pancreatic disease, and are not uncommon when there is gross diarrhœa or the subject is ingesting large quantities of starchy foods.

Protein-splitting ferment.—Either the *gastric* or the *duodenal* contents may be examined for trypsin. A positive result excludes complete obstruction of the pancreatic ducts, but a negative result in either fluid is not conclusive. It is unlikely that quantitative estimations will be of any value owing to the unknown degree of dilution. Regurgitation of duodenal fluid into the stomach is uncertain, but it has been suggested that the reflux might be provoked by administering 0·4 per cent. hydrochloric acid. Generally, however, direct duodenal intubation is employed. When examining the gastric contents for trypsin it is, of course, essential to make the reaction alkaline.

Examination of the *fæces* for protein-splitting ferments has proved disappointing. In a certain number of healthy individuals no such enzyme can be detected, and in the rest, when quantitative methods are employed and the results are expressed in terms of the dried fæces, a wide range of variation is obtained. It would appear, therefore, that results characteristic of pancreatic lesions do not exist. Examination of the *blood* and *urine* for trypsin is of little or no value.

If the external secretion of the pancreas is deficient it might be expected that the fæces would contain more protein and protein-products than normally, though the action of intestinal erepsin, and of bacteria, and the influence of the rate of passage of the intestinal contents are all obvious complicating factors. Whilst it is true that the total nitrogen expressed as a percentage of the dried fæces is increased in gross pancreatic disease, such a wide range of variation is found in other pathological conditions—gastro-intestinal disease often giving quite as high values as pancreatic disease—that the estimation is of little or no value. A proper metabolism experiment in which the intake and output of nitrogen are measured gives more information, but is not a practical proposition in routine clinical work.

Microscopical examination of the fæces for undigested muscle-fibres is a simple qualitative test of some value, but it is important to realise what constitutes "creatorrhœa," or the passage of undigested meat fibres. The connective tissue binding the fibres together is digested by the gastric juice, so that pancreatic trypsin acts on individual muscle-fibre fragments. There results seriatim the disappearance of the nuclei, the rounding of the ends of each fragment, and the disappearance of the transverse striations, leaving round yellow-brown fragments, which may either show a faint longitudinal striation or may appear quite homogeneous, and finally the complete disappearance of muscle-fibres. Fibres with rounded ends, but visible transverse striations are not uncommon in simple diarrhœa. The discovery of numerous fibres with irregular ends and well-marked striations ("true creatorrhœa") almost always points to a deficiency of pancreatic trypsin, but their absence does not exclude a gross lesion of the pancreas, since other protein-splitting ferments (intestinal or bacterial) may cause partial or complete digestion of muscle. The only things likely to be mistaken for muscle-fibres are the woody fibres of certain vegetables. There is rarely any serious difficulty, however, because the striations of the woody fibres are much coarser, more irregular, and more refractile. Naturally, when the observations are made, the patient must be consuming meat or poultry. Some investigators have claimed that better results may be obtained with special test diets, but for routine clinical work an ordinary hospital diet, containing meat, is generally satisfactory.

Fat-splitting ferment (lipase).—Tests for lipase in gastric contents, blood, or urine are of little or no value clinically, but examination of the duodenal contents for lipase is sometimes useful. As in tests for trypsin in duodenal fluid, a positive result excludes a complete obstruction of the pancreatic ducts, but a negative result is not conclusive evidence of the presence of such obstruction. Tests for the two ferments should be run in parallel. Tests for lipase in the fæces are of no value, because the lipase is destroyed by trypsin, but microscopical examination of the stools and a differential estimation of fat in fæces are generally recognised as of value in pancreatic disease.

General Appearance and Microscopical Examination of Fæces.

The passage of bulky stools is a well-recognised clinical feature of pancreatic disease, though other conditions may cause bulky stools—e.g., obstructions of the bile-duct, cœliac disease, sprue, congenital steatorrhœa, gastro-colic fistula, and mesenteric tuberculosis involving the lacteals. Bulky, watery stools, due to diarrhœa are easily differentiated. The stools in the above diseases are not only bulky, but fatty in appearance, owing to the presence of an excess of fat. The passage of fatty stools, which are liquid when passed and set solid on cooling, constitutes "true steatorrhœa," though the term steatorrhœa is often applied to the passage of any fatty stool, even though it does not solidify on cooling. True, steatorrhœa is apparently diagnostic of pancreatic defect (except possibly in congenital steatorrhœa). The fresh stool consists of fæcal material floating in molten oil, and on cooling the fæcal matter forms a plate.

Microscopical examination is useful, not only to check the macroscopical appearance of fat, but also to give a rough idea of the type of fat (neutral fat globules, fatty acid crystals, soap plaques) present. When there is a deficiency of the pancreatic juice, it is the splitting of the fats which is defective. Hence the excess of fat is chiefly in the form of neutral fat. On microscopical examination, therefore, oily globules, but not an excess of fatty acid crystals or of soap plaques, may be found in a typical uncomplicated case. In clinical work, however, cases of combined pancreatic and liver disease are commoner than those of pure pancreatic disease, wherefore the microscopical findings are often not "typical." Moreover, the neutral fat is often so finely divided that it is not readily seen under the microscope, and when oily globules are visible it is important to exclude liquid paraffin and other oily drugs as their source. The results of microscopical examination therefore can only be interpreted in the light of the clinical examination. Lastly, even in the complete absence of pancreatic juice the neutral fats may be hydro-

lysed lower in the gut by bacteria, for which reason the absence of a "typical" microscopical picture by no means excludes the existence of pancreatic disease.

In the laboratory, one of the chief reasons for making a microscopical examination is to decide whether or not the laborious analysis of fæces for fat is worth undertaking. If, macroscopically, the fæces are nor bulky and not fatty-looking, and if microscopically, no fat globules, no fatty-acid crystals, and only occasional soap plaques are seen, then chemical analysis is certainly a waste of time.

Fat in fæces.—Normally, of the dried fæces, not more than one-fourth to one-third is fat, and of the fæcal fat not more than one-fourth to one-third is unsplit. In typical pancreatic cases the total fat percentage is excessive, often over 50, and the splitting is defective, the unsplit neutral fat being 40 to 70 per cent., or even more, of the fæcal fat. But, as indicated in the last section, such typical results are the exception rather than the rule, and the finding of a high percentage of total fat of which the greater proportion is "split" (free fatty acids and soaps) does not by any means exclude pancreatic disease. Differentiation between free fatty acids and soaps is of no value, since the reaction of the fæces is the chief factor influencing the proportion of fatty acids which is combined as soaps.

G. A. HARRISON, M.D.Camb.,
Reader in Chemical Pathology in the University of London; Chemical Pathologist to St. Bartholomew's Hospital.

IN Dr. John Freeman's article on the Significance of Idiopathic Skin Reactions (Part II.), which appeared on page 1197 of THE LANCET last week, the first paragraph, which preceded the list of asthma-group diseases, should have read as follows:—

"In Part I. of this article it was made clear that we can produce a long list of symptoms by applying grass pollen to the hay-fever subject in various ways. Let us make a list of these hay-fever 'symptoms,' for they are identical with the 'diseases' (produced by various protein irritants) which we are to test for by skin reactions."

DONATIONS AND BEQUESTS.—Mr. Clemont A. Ravenscroft left, among other bequests, £30,000 upon trust for his brother Leonard for life, with remainder on his decease equally between St. Mary's Hospital, King's College Hospital, St. George's Hospital, Charing Cross Hospital, and the London Hospital.—Colonel Arthur Bray, T.D., of Church Lane House, Adel, Leeds, left £1000 each to the Leeds University and Leeds General Infirmary.—Mr. P. Breda Vander Byl left £1000 to the London Hospital, among other bequests.—Mr. George Strachan, of Ellisland, Pollockshields, Glasgow, left, among other bequests, £2500 each to the Glasgow Royal Infirmary, the Glasgow Western Infirmary, the Glasgow Victoria Infirmary, and £2000 to the Glasgow Royal Hospital for Sick Children; £1500 to the Elder Cottage Hospital, Govan; £500 each to the Glasgow Eye Infirmary, the Princess Louise Scottish Hospital for Limbless Sailors and Soldiers, the Ralston Auxiliary Hospital, the Royal Samaritan Hospital for Women, Glasgow, the Glasgow Royal Cancer Hospital, the Glasgow Ear, Nose, and Throat Hospital, the Glasgow St. Andrew Ambulance Association, and St. Dunstan's Hospital for Blind Soldiers and Sailors.—Sir Ralph Collingwood Forster, Bart., of Sutton, left £5000 to the Sutton Hospital (or such part as he had not given since the date of his will, Feb. 28th), for general purposes, and £1000 each to the Surrey Convalescent Home for Women at Bognor, the Surrey Convalescent Home for Children at Bognor, and the Surrey Convalescent Home for Men at Seaforth.—Colonel Sir William E. C. Currie, of Itton Court, Chepstow, among other bequests left £1000 to the Newport Hospital and £1000 to Chepstow Hospital.—Mr. Clement Arrol Ravenscroft, of Westbourne-terrace, Paddington, left £500 to St. Dunstan's Hostel for the Blind; £30,000 on trust for his brother Leonard for life, with remainder on his decease equally between St. Mary's Hospital, King's College Hospital, St. George's Hospital, Charing Cross Hospital, and the London Hospital.

Special Articles.

NATIONAL INSTITUTE FOR THE DEAF.

THE annual meeting of the National Institute for the Deaf was held at the Church House, Westminster, on Friday, May 30th, the President, Lord Charnwood, in the chair. After welcoming Mr. Stanley Baldwin, who had promised to address the meeting, and who was present at great personal inconvenience, the chairman referred to the progress of the Institute. It had, he said, been steadily growing in influence since their last meeting, while efforts which had been made to get the importance of the cause sufficiently realised by the public had begun to tell. During the last 12 months, for example, a scheme had been framed, and was now ready to be launched, for supporting a school for the higher education of congenitally deaf people, and promises of financial support to it had already been received. Plans had also matured for starting in London a centre for social intercourse, and once these were under weigh the deaf, first in London and thence elsewhere, would help themselves and one another, and the necessary financial support, he thought, would soon be found. Much headway had been made in promoting local organisations, and such work could only be done thoroughly by the Institute itself. As to the result of pressure upon the last administration, it was entirely due to the Institute that anything was done; now the Minister of Health agreed with the Minister of Education, and would make an inquiry for himself through an experienced official in whom there was complete confidence. The conditions of the deaf and the measures necessary for the removal of some of their difficulties would follow, he thought, on the sort of public inquiry which was desirable being held. The problem of the deaf was now before the minds of our rulers in a way and to an extent which it was not when the annual meeting of the Institute was held last year.

Mr. Baldwin's Appeal.

Mr. Baldwin said he would try to put in a few words what were the disabilities of the deaf, and at the same time to arouse the sympathy of the outside public, so that they would be ready to help the Institute in its admirable work. The outside public had very little realisation of the tragic fate of the deaf. He was not thinking so much of those who were born so, tragic as their case was, but the public should be careful not to confuse the special teaching, given to those born deaf, with the requirements of the ordinary deaf.

The first thing that struck him—it was most unfair and he did not know the reason—was the complete difference in the treatment of those who were blind and those who were deaf by the outside world. Blindness was a most terrible affliction, but from the dawn of history it had been met by those who were not blind with a consideration and kindness which went far in the alleviation of the lot of the sufferers. Every allowance was made for them; everyone was ready to help them across the road; everybody was ready to talk to them and tell them of things; and they had open to them all the resources that modern science could bring to their delectation in the way of speech and music. If the blind had lost their sight in later life they had the recollection that nothing could take from them: the beautiful sights of this earth and the faces of their friends who could talk with them, while they could hear the voices of their fellow creatures. There was a gulf of isolation between their fate and the fate of the deaf. There seemed to be very little natural sympathy for deafness, and that arose from want of thought and want of imagination. One never heard a joke made at the

expense of the blind; pantomimes and ordinary conversation were full of jests at the expense of the deaf. If people were short-sighted and wished for a book or a picture to be brought nearer to them in order that they might see better, one did not shout at them "*Can't you see? Are you blind?*" But if people were asked to repeat a remark, the reply might often be "*Can't you hear? Are you deaf?*" This lack of sympathy could be found in every place, in every country, and at all times. Mr. Baldwin said he was thus calling attention to the obvious in the hope that his words might lead to a little more consideration, and a little more courtesy being shown to those who suffered from deafness. With the totally deaf the prospect was appalling. It would be indecent on the part of anyone who still had command of his faculties to ask which was the greater deprivation, sight or hearing. Both were terrible, but he had often thought that there could be no more awful fate than to be completely cut off from ordinary daily intercourse with human beings, and that of course was what complete deafness meant. Those who were not deaf ought to realise that deafness did not always mean just complete silence and oblivion; it was often accompanied with distressing noises in the head and troubles which anyone who had suffered from temporary deafness would never forget. When the deaf could hear by the aid of appliances, how different again was their fate from that of the blind. Everyone was eager to help and converse with them. There was not one person in a hundred who would go voluntarily to speak to a deaf person by the aid of an instrument. People made for the other side of the room, which must cause the deaf a great deal of unnecessary pain. People, when they talked to the deaf, became, as it were, paralysed; their conversation became unnatural and stilted. The moment that deaf people got to the point when artificial aids must be employed, they were in a slow process of being immured alive; they were cut off completely from contact with their kind. That was a very terrible fate, and everything should be done to lighten it for them. There was no better way to begin than by altering our behaviour towards deaf people, assimilating it to our behaviour towards the blind. As with the blind, very often the sense of hearing and the power of memory became more acute; he imagined that with the deaf, the sense of sight and the power of memory grew. To those who became deaf late in life that which came to them through the eye must be of growing importance all through their lives. With such training as Lord Charnwood had alluded to, the deaf subject could be taught an appreciation of the beautiful things of this world; and if music should be cut off from them, why should they not learn to derive an equal pleasure from the sight of beautiful things, of books, works of art, and the scenes of nature? "The deaf and the blind alike need our help," he said, "and to remedy the deficiency let us try to open for them, as far as we can, those deeper and permanent spiritual possessions which would never fail, and which would last to the end of their days."

Major Bonn, the son of the late Mr. Leo Bonn, the virtual founder of the Institute, then proposed a vote of thanks to Mr. Baldwin, which was seconded by Sir Squire Sprigge, and briefly replied to.

Report and Formal Resolution.

The report and statement of accounts which showed a deficit of £115 for the year ending March 31st, 1930, had been circulated to the meeting, but they were summarised by Mr. A. J. Story, the hon. secretary, and Mr. W. G. Yates, the hon. treasurer, respectively. On being put to the meeting by the President and seconded by Mr. M. Birley, chairman of the executive committee, the report and statement of accounts were carried unanimously.

Sir Harry Stephen proposed and Mr. Yates seconded an amendment to the articles of Constitution enlarging the composition of the executive committee with the object of giving greater representation to Counties Associations. This having been agreed to, on the motion of Admiral Sir Edward Bradford, the thanks of the meeting were given to the honorary officers of the Institute, who were confirmed in their several capacities.

Mr. Myers, one of the honorary auditors, submitted a resolution acknowledging the services of the executive committee, and suggesting the following names for election to that body:—Sir Harry Stephen, Rev. F. W. G. Gilby, Rev. A. Smith, The Hon. Mrs. John Tennant, Miss H. Davids, Miss M. Hare, Miss B. Neville, Miss F. M. Townsend, Dr. C. Heath, Dr. D. A. H. Moses, Major F. J. Wegg Prosser, Mr. E. Ayliffe, Mr. S. A. N. Oxley, Mr. C. Shaw, and Mr. A. W. Taylor be elected for the ensuing year.

In seconding this resolution, Col. F. E. Fremantle emphasised the need for keeping the welfare of the deaf constantly before the Government, while there remained the necessity for medical research into the causes of deafness and the means for its prevention.

The proceedings closed with a vote of thanks to the chairman.

IRELAND.

(FROM OUR OWN CORRESPONDENT).

The Sweepstakes Bill.

THE "Sweepstakes Bill" has now passed both Dail and Senate, and only awaits the signature of the Governor-General to become the law of the land. While the opposition to the Bill failed to have any effect in either house, it cannot be claimed that there is any enthusiasm for the measure, or any genuine hope that it will remove the difficulties of the Dublin hospitals. The real financial position of the several hospitals is unknown except to those in the inner circle of each institution. Most of them exhibit overdrafts, but few exhibit as openly a statement of their assets. This may be good propaganda, but it makes understanding of the hospital problem impossible. Suggestions were made in the debates in the Dail and Senate that a thorough investigation of the financial position of the several hospitals is desirable. If this is to be done it would be preferable that it should be undertaken by the hospitals themselves rather than by any external authority. It would seem that even a preliminary survey would be helpful, before any sweepstakes are promoted. If the several hospitals which are in genuine need were to pool their influence in promoting a joint sweepstake, it is possible that their immediate needs might be satisfied. If half a dozen institutions promote sweepstakes independently, none will benefit to an appreciable extent, and the general problem will be unchanged. Moreover, the common belief that sweepstakes are an unfailing resource is certain to interfere with what must remain the chief normal source of hospital income—the charity of the benevolent.

Royal College of Surgeons in Ireland.

Mr. Richard Atkinson Stoney has been elected President of the Royal College of Surgeons in Ireland. He had been vice-president for the past two years. Mr. Stoney is a graduate in medicine and surgery of Dublin University, and has been a Fellow of the Royal College of Surgeons in Ireland since 1906, and a member of the Council of the College for several years. He is senior visiting surgeon to the Royal City of Dublin Hospital, and is at present President of the Section of Surgery of the Royal Academy of Medicine in Ireland. Mr. Frank Chetwode Crawley has been elected Vice-President of the College. He is a graduate in arts of Cambridge University and in medicine and surgery of Dublin. He has been a Fellow of the Royal College of Surgeons in Ireland since 1900. He is ophthalmic surgeon to the Royal City of Dublin Hospital, and surgeon to the

Royal Victoria Eye and Ear Hospital. He held the post of surgeon dentist in ordinary to the Lord Lieutenant during the Vice-Royalty of Lord Aberdeen. He is at present president of the Ophthalmological Society of the United Kingdom.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

Bacterial Aftergrowth in Water.

SOME cities in this country are suffering from what appears to be a growth of bacteria in the water-supply after it has passed through the plant for filtration and/or chlorination. When the multiplying organism happen to be the colon bacillus a difficult situation arises. The possibility that pollution is occurring is naturally the first thought, but even when this possibility appears to be rigorously excluded at any given time, the sanitary engineer is still faced with the difficulty that his most trustworthy method of detecting pollution at any subsequent date is removed so long as the bacterial aftergrowth continues. In an attempt to investigate the extent, and, if possible, the cause of this phenomenon, a questionaire was recently sent out by the American Public Health Association to 90 cities with a total population of 30 millions. Replies were received from 48 cities representing a total population of 25 millions. Fourteen cities with an estimated population of nearly 16 millions reported that they had had or were having trouble with bacterial aftergrowths. Among these cities there are 48 open reservoirs in use. The Committee on Water Supply of the A.P.H.A. recommends that water departments apply themselves to a study of these reservoirs with the hope that their number may be reduced to a minimum. However, there is evidence that open reservoirs are not the sole source of multiplying colon bacilli. Five cities state that there is increase in these organisms in the distribution system from sections where there is no possibility of the water coming from an open reservoir. Obviously there is need for more intensive investigation, and now that the problem has been defined such investigation will soon follow.

The Falling Death-rate.

The record in low mortality established in the the first three months of this year by the Metropolitan Life Insurance Company is attributed in their statistical bulletin in part to the absence of any epidemic, but also to an all-round reduction with especial improvement for such important diseases as influenza, tuberculosis, pneumonia, diarrhœa, and chronic nephritis. The drop in tuberculosis has been so pronounced as to make it almost certain that a new minimumwill be reached for this disease in 1930. The rate for white policy-holders for the first quarter is 65·3 per 100,000, and this is 10 per cent. lower than the previous lowest period for the first quarter. The death-rate from alcoholism shows a marked drop and for once cancer deaths are on the decline. Accidents as a whole remain in statu quo but automobile fatalities continue to increase steadily. Among the contagious diseases measles has been very prevalent of late, but fortunately the death-rate does not yet show a marked increase. Epidemic cerebro-spinal fever is more prevalent than it has been for some time.

Maternity in Dollars.

The present fashion for medical cost-accounting has produced two studies recently in the expense involved in childbirth. A professor in the Ohio State University finds that the cost of a baby in Columbus, Ohio, varies from nothing at all to $692. The average expense to parents with an income of $3000 or more is $270; for those with an income of $1200 to $3000 it is $129; and for those whose income is less than $1200 it is $64. The investigator concludes that only the well-to-do and the dependent have medical care at childbirth that approaches modern standards of obstetrics. Others would purchase competent medical care if they had the means to do so.

Another study [1] comes from Berkeley, California, both of them covering the year 1928. The average cost in Berkeley was $213 per baby. In half of the cases the cost was $179 or less. Almost 10 per cent. were charged no physician's fee. The mean cost of the physicians' services was $92, and the mean cost of midwives $33, while the mean cost of trained nurses amounted to $116. The other important item in the bill is hospital room $82, or ward $62.

SURGERY IN AUSTRALASIA.

EXAMINATIONS AND ETIQUETTE.

THE annual general meeting of the College of Surgeons of Australasia was held in Melbourne from March 24th to 27th. About 170 Fellows from all parts of the Commonwealth and New Zealand attended.

The Australasian and English Fellowships.

In his inaugural address, the President, Sir Henry Newland, of Adelaide, referred to the qualifications for admission to Fellowship of the college. It was probable, he said, that in the future, the ranks of the Fellows of the college would be replenished chiefly by young men who, soon after graduating, decided to undergo special training for the practice of surgery, which was insisted upon in the constitution of the college. Such candidates would be required to have one year's training as house surgeon or house physician, one year's training as senior resident officer at a special hospital, a general surgical qualification recognised to be of senior standing by the Council, and surgical experience gained by assisting the surgical members of the honorary staffs of the large public hospitals at operations and in the out-patient department. It was obligatory that the course should last at least five years after graduation.

It was probable, he said, that the primary Fellowship examination of the Royal College of Surgeons of England would be held in Australia in August or September, 1931, provided that not less than 25 eligible candidates offered themselves for examination. If this experiment proved successful, it would forge a link in the chain binding Australia to England, and would bring more Australian graduates intimately under the traditions of British surgery.

Two examiners in anatomy and two examiners in physiology, who shall be present or past members of the board of examiners in anatomy and physiology for the Fellowship, will be sent by the college from England. A professor of anatomy and a professor of physiology, or such other persons as may be agreed upon, shall be appointed by the council from names submitted by the College of Surgeons of Australasia, to act as assessors for the examiners. The expected deficit on the examination shall be borne equally by the two colleges. The Royal College of Surgeons emphasises the fact that the proposed scheme will be provisional and experimental only, and that it shall be free to decline to hold another examination in Australia without laying itself open to any suggestion of a breach of faith.

The suggested scheme has been circulated to all members of the council, and the replies are unanimously in favour of its adoption. The honorary secretary has therefore sent a reply to the Royal College of Surgeons, accepting the scheme, with the proviso that, if this trial Fellowship examination in Australia proves unsatisfactory for any reason, either college is free to refuse to repeat the experiment.

[1] Bolt, R. A.: Jour. Amer. Med. Assoc., 1930, xciv., 1561.

The Surgeon's Fee.

The following rules for the conduct of Fellows have been drawn up and approved :—

1. The patient, or the person legally responsible for him, must consent in the choice made of a surgeon to perform the operation. It is to be noted that such a consent would be an essential factor in the successful suit by a surgeon for the recovery of his fee.

2. Having been selected by the patient, or the person legally responsible for him, the surgeon is personally responsible to him for the operation. He is also responsible for, and shall conduct, the post-operative treatment, except by special arrangement with the patient, or the person legally responsible for him.

3. The surgeon must render his account direct to the patient, or to the person legally responsible for him.

4. The surgeon must not accept his fee for an operation from the practitioner in charge of the patient, unless the surgeon forwards a receipt for the fee received direct to the patient, or to the person legally responsible for him.

5. If circumstances compel the surgeon to delegate the post-operative treatment of a patient to another practitioner, the latter must collect the fee for so doing direct from the patient, or from the person legally responsible for him. The surgeon must not pay the practitioner in charge of the patient a fee for conducting the post-operative treatment.

6. Separate accounts for the assistant, anæsthetist, or for other necessary services—e.g., the pathologist—must be sent to the patient, or to the person legally responsible for him, or the surgeon must state on his account form the exact amounts due for these services.

7. The assistant's standard fee shall be not more than one-eighth of the operation fee, or, alternatively, not more than five guineas. When, owing to special circumstances, the assistant's fee is larger than this amount, the assistant must render his own account on his own account form.

8. The anæsthetist's standard fee shall not be more than one-eighth of the operation fee, or, alternatively, not more than five guineas. When, owing to special circumstances, the anæsthetist's fee is larger than this amount, the anæsthetist must render his own account on his own account form.

9. It is desirable that the practitioner in charge of the patient should be present at an operation on his patient. Should he have to travel any considerable distance for this purpose, the patient must be informed beforehand of the extra fee involved.

Affairs of the College.

The President reported that there are now 353 Fellows of the college (two of them honorary) and 14 junior Members. The balance-sheet showed that the finances were in a sound state, and though the *Journal* showed a deficit of about £133, the executive expressed its congratulations on the high standard maintained. The only nominations for the council were E. D. Adhern, A. L. Kenny, Sir Henry Newland, R. Hamilton Russell, and F. P. Sandes, the retiring members, who were accordingly re-elected. It is proposed that the college shall be incorporated under The Companies Act of one of the Australian States, and Victoria has been chosen. If it is decided later to apply for a Royal Charter, there will be nothing to prevent a dissolution of the incorporation.

At the inaugural meeting Prof. F. Wood Jones gave a lecture on Physical and Biological Concepts in Science, and at the conclusion of the meeting Mr. R. Hamilton Russell was presented with his portrait, painted by Mr. G. W. Lambert, A.R.A. In thanking the President and the college, Mr. Hamilton Russell recalled the association in his student days with Lord Lister, at whose feet, he said, he laid this tribute.

The last evening of the conference was devoted to scientific papers in the several sections.

LONDON FOOT HOSPITAL.—It is proposed to purchase the new freehold building at 33, Fitzroy-square for £18,000, but at present only £7000 is available. Last year's income on general accounts was £2461, but the expenditure was nearly £900 more, chiefly by reason of bank interest. A recent annual meeting was reminded that the hospital was the only one of its kind in Europe until similar work was undertaken in the provinces.

GENERAL MEDICAL COUNCIL.

SUMMER SESSION, MAY 27TH–31ST, 1930.

PENAL CASES REPORTED BY THE DENTAL BOARD.

A FURTHER report of the Dental Board on *the Case of James Edgar Nelson* [1] was considered in camera. The President announced that the Registrar had been instructed to erase Mr. Nelson's name from the Register.

The Case of Joseph Limbrick, registered as of 8, High-street, North Woolwich, "Dentist 1921." The Dental Board recommended that Mr. Limbrick's name be erased from the Register after consideration of the following facts, established before them by evidence :—

Limbrick was on Nov. 21st, 1929, at the Central Criminal Court, convicted on indictment for that he, on Oct. 23rd, 1926, married Dora Kates during the life of his wife Emily Jane, in respect of which he was sentenced to six months' imprisonment in the second division. He had been a Welsh miner and local preacher. He was married to his present wife on Dec. 31st, 1909, at the Congregational Chapel, Talbot-street, Oldbury. There were three children of the marriage. In June, 1919, Limbrick deserted his wife, who later in the same year obtained a separation order against him.

He went to Southampton, and there in August, 1926, met Dora Kates. Representing himself to be a widower he proposed, and they went through a form of marriage at Brentford Registry Office on Oct. 23rd, 1926. They resided at various addresses until 1928, when they moved to 8, High-street, North Woolwich.

In September, 1929, Limbrick became friendly with a patient named Alice Church, and at his suggestion she came to reside at 8, High-street, North Woolwich. He misconducted himself with the said Alice Church, and on Oct. 15th, 1929, left Woolwich with her in a car which he had and returned on the 18th. Meanwhile Miss Kates, having learned that his wife was still alive, had written to Limbrick saying so. On his return he taunted her about the letter and stated that she was no better than Alice Church.

Dora Kates, when she met Limbrick, had £1000. This has all gone. Alice Church had money which was used in part payment for the motor-car. The arrears of maintenance for the legal wife of Limbrick amounted to about £550.

Limbrick stated that he was being divorced, that he wished to marry Miss Kates as soon as possible, and to go with her abroad to practise dentistry. He had already obtained a passport.

The Dental Board's solicitor, Mr. C. J. Harper, and Mr. Limbrick addressed the Council. After deliberation in camera, the President announced that the Council had directed the Registrar to erase Mr. Limbrick's name.

The Case of Frederick William Osborn, registered as of 22A, Regent-street, Rugby, "Dentist 1921." The Dental Board found that the name of Mr. Osborn ought to be erased from the Register owing to the following facts, established before them by evidence :

Osborn had been convicted on Feb. 18th, 1930, at Rugby Petty Sessions, of feloniously stealing a banker's cheque value £4, the property of Harry Seal-Wilson, and had been fined £3 19*s.* and £1 1*s.* costs. He had pleaded guilty. Osborn had been employed by Mr. Seal-Wilson, a dentist, whose principal surgery was in Bloomsbury, but who had several branches about the country. Osborn had been manager of the Rugby branch at a salary of £5 10*s.* with commission. He had opened a letter addressed to Seal-Wilson which contained a cheque, endorsed it without authority, and used it for his own purposes. There were other cases, but only the one above-mentioned had been proceeded with.

In 1927–28 Osborn had embezzled the sum of £64 belonging to Mr. Seal-Wilson by taking letters containing cheques and endorsing them in Seal-Wilson's name. The latter, at Osborn's earnest request and solemn assurance that it should never occur again, overlooked the matter. Osborn had, however, again stolen his cheques, and the prosecution followed.

Mr. Osborn did not attend, and after deliberation in camera the President announced that the Council

[1] THE LANCET, 1929, ii., 1191.

had directed the Registrar to erase his name from the Dental Register.

PENAL CASES REFERRED FROM 1929.

The Case of Elizabeth Caroline Mudie, registered as of 3, Windsor-quadrant, Kelvinside, Glasgow, W., L.R.C.P. Edin. 1925, L.R.C.S. Edin. 1925, L.R.F.P.S. Glasg. 1925, who had been referred from the summer session, 1929.[2]

Mr. Harper said that the Medical Defence Union had received copies of the testimonials provided by Dr. Mudie and did not wish to prefer any further charge. Dr. Mudie said that she had no further connexion with the business in question and no longer derived any benefit from it. After deliberation in camera the President announced that the Council had decided not to erase Dr. Mudie's name from the Register.

The Case of William Mulhall Corbet,[3] registered as of 66, Finsbury-pavement, E.C. 2, M.B., B.Ch. 1915, N.U.Irel. who had been referred from the summer session, 1929. Mr. Corbet appeared. Mr. Harper announced that the Medical Defence Union had been furnished with a copy of the testimonials supplied by Mr. Corbet and had no further complaints to offer. The Legal Assessor read the testimonials, and Mr. Corbet gave assurances of regret and promises to refrain in future from the conduct proved against him. After deliberation in camera the President announced that the Council had not seen fit to erase Mr. Corbet's name from the Register.

NEW PENAL CASES.

The Case of Frederick Wyndham Chamberlain, registered as of Aylsham-road, Norwich, L.M.S.S.A. Lond. 1915, M.R.C.S. Eng. 1920, L.R.C.P. Lond. 1920, who had been summoned to appear before the Council on the following charge :—

"That you were at the Essex County Assizes, commencing on Feb. 10th, 1930, convicted of indecently assaulting two male persons under the age of 16 years, and were sentenced to 15 months' imprisonment in the second division."

Mr. Harper laid the facts before the Council and read the judge's summing-up at the trial. Mr. Chamberlain did not appear and was not represented. After deliberation in camera the President announced that the Council had found the charge proved to their satisfaction and had directed the Registrar to erase Mr. Chamberlain's name from the Register.

Alleged Adultery with a Patient.

The Case of Frederick William Barton (senior), registered as of 218, Stockwell-road, London, S.W. 9, M.R.C.S. Eng. 1889, L.R.C.P. Lond. 1889, L.S.A. Lond. 1889, who had been summoned to appear before the Council on the following charge :—

"That, being a registered medical practitioner, you abused your position by committing adultery with Mrs. Lizzie Catherine Thomas, a widow, with whom you stood and with whose deceased husband you had stood in professional relationship, of which adultery you were found guilty by the decree of the Probate, Divorce and Admiralty Division (Divorce) of the High Court of Justice, dated Jan. 16th, 1930, in the case of Barton *v.* Barton, in which you were the respondent. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

Mr. Barton did not appear and was not represented. Mr. Harper laid the facts before the Council and put in evidence the record of divorce proceedings. Mr. Barton admitted, he said, that Mr. Thomas had been a patient of his and that there had been a liaison, but said it had not occurred until some years after Mr. Thomas's death, when professional relationship had ceased. There was a declaration from Dr. Barton's son describing the relationship between respondent and Mrs. Thomas and the professional attendance of Dr. Barton on Mr. Thomas.

Mr. Harper called in evidence Mrs. Emily Allen Claydon, Mrs. Thomas's landlady, who testified to her statutory declaration, describing professional relationship between Dr. Barton and Mrs. Thomas, although she understood that Dr. Barton had made no charge.

Miss Alice Ellis, a church nurse, testified to her statutory declaration in which she said that Mrs. Thomas had told her that Dr. Barton had been their doctor for many years. She stated that he had actually attended Mrs. Thomas after her husband's death in 1925.

After deliberation in camera the President announced that the Council had adjourned the case for six months, in order that the respondent might appear.

Mr. Harper drew attention to the fact that this case concerned Frederick William Barton senior, of 218, Stockwell-road, and not the younger practitioner of the same name of 182, Stockwell-road.

A Conviction for Drunkenness.

The Case of Percy Bateman, registered as of 423, New Cross-road, London, S.E. 14, L.R.C.P. & S. Edin. 1906, L.F.P.S. Glasg. 1906, who had been summoned to appear before the Council on the following charge :—

"That you were on April 2nd, 1930, convicted at the Woolwich Police-court of the following misdemeanour—namely, of being drunk, and were fined 5*s.* or five days' imprisonment in default."

Mr. Harper explained that this single conviction followed on four similar convictions in 1927 and another in 1928. In the latter year the respondent had appeared before the Council and given an undertaking that conviction should never occur again. Six months later he had again been summoned for drunkenness, but had been admitted to a mental home in Camberwell before sentence had been passed. The story was in many ways a tragic one. Dr. Bateman had left the home too soon and his nerves had again given way. Mrs. Bateman had then secured a small house on the Becontree estate and there the doctor had obtained an appointment on the panel. The present conviction arose out of a meeting with a publican friend on the day the respondent had received a small cheque for panel fees. The doctor had remembered no more until he had gone up to a policeman and invited arrest. Next day he had been convicted, and admitted into the Nuneaton home of the C.E.T.S. on a specially reduced charge which Mrs. Bateman was now struggling to pay, week by week. Mr. Harper read two letters from the respondent, one from the superintendent of the home, and one from the police commissioner. Dr. Bateman's letters expressed no regret and admitted no drunkenness but spoke only of loss of memory and overwork; he undertook to remain in the home for 12 months. The superintendent said that the doctor was suffering from nervous breakdown, but was improving; he hoped ultimately to do medical work in more congenial surroundings. Mrs. Bateman confirmed the facts set out by Mr. Harper.

After deliberation in camera the President announced that the Council had postponed judgment on the conviction proved against Mr. Bateman for 12 months.

Removal of Name.

The Registrar reported that the three degrees held by *Mr. William Wolfe Glucksman* had been withdrawn, the L.R.F.P.S. Glasg. 1920, having been recalled in February last. The committee reported that they were satisfied that Mr. Glucksman had not been deprived of his qualifications on the ground of the adoption of any theory of medicine or surgery, and the Council directed the Registrar to remove Mr. Glucksman's name from the Register under Standing Orders, Chap. 13. ii., 7.

Alleged Canvassing and Alienation of Patients: the Case Dismissed.

The Case of Arnold Fletcher Doyle, registered as of Highbury, Old Hill, Staffs., M.R.C.S. Eng. 1923,

[2] THE LANCET, 1929, i., 1213.
[3] THE LANCET, 1929, i., 1216.

L.R.C.P. Lond. 1923, M.B., B.S. 1924, U. Lond., who had been summoned to appear before the Council on the following charge :—

"That, being a registered medical practitioner, and while engaged as assistant in his practice to Thomas Ellis Mitchell, M.B., and subsequently, you endeavoured to attract to yourself the patients of the said Thomas Ellis Mitchell, and in one instance of Dr. A. McQueen, by various improper means and in particular: (1) By canvassing such patients either directly yourself or by means of an agent. Patients so canvassed were Mrs. Daisy Homer, Mrs. Florence Plant, Samuel Jackson (a patient of Dr. A. McQueen), Mrs. Emmie Willetts, Mrs. Clara Tommey, Mrs. Kate Maguire, and Miss Lucy Coley. (2) By substituting without authority your name for that of the said Thomas Ellis Mitchell on the medical cards of certain patients of his—namely, Norman Leslie Clark, Horace Priest, and Mrs. Lily Sidaway. (3) By asking the secretaries—viz., Dan Adams Priest and Benjamin Troman, of the Women's Clubs of the said Thomas Ellis Mitchell for lists of members and for their help in getting you the members as patients. (4) By depreciating to patients of the said Thomas Ellis Mitchell the capabilities of himself and of his dispenser, Miss Mary Constance Wilkinson. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainant was Dr. T. E. Mitchell. Dr. Mitchell was represented by Mr. T. C. Carthew, counsel, instructed by Messrs. Taylor, Jelf and Co. Dr. Doyle was represented by Mr. Ward, instructed by Messrs. Jeffrey, Wild and Lovatt.

Mr. Carthew, opening the case for the complainant, said that in September, 1928, Dr. Mitchell had advertised for an assistant in the *British Medical Journal* and Dr. Doyle had been appointed, but no agreement had ever been signed. An agreement in the usual form had been put forward by complainant in April, 1929, but respondent had then refused to sign it. Respondent had taken over the panel patients of his predecessor, acting as deputy for him until the end of 1928, and at the beginning of 1929 the patients had been transferred. In August, 1929, complainant had found respondent "storming at" the dispenser, and said that complaints should be brought to him in the first place. Respondent had said he had been very dissatisfied with the dispensing and had set traps for her; he had added that for "two pins he would twist her blinking neck." Thereafter he had made up his own prescriptions. Soon after respondent had demanded that Dr. Mitchell should sell him a share of the practice. Dr. Mitchell had refused, having a son qualifying at Guy's. He had then taken proceedings in the County Court to terminate the assistantship, as respondent refused to accept the sum offered in lieu of notice. The new assistant had found that in several panel cards Dr. Mitchell's name had been scratched out with pen or knife, and that Dr. Doyle had signed his name in its place. Respondent claimed that this was done with complainant's knowledge because his panel was full; complainant denied this. In September or October Dr. Doyle had started a women's club in the same town and had approached secretaries attempting to secure members from other clubs. Patients would testify to respondent's canvassing. There was evidence that respondent had gone into a patient's house the day after complainant had called and prescribed, and had advised the mother to throw the medicine down the sink.

Dr. Mitchell testified to his statutory declaration, and in reply to cross-examination confirmed the facts as set forth by his counsel. There had been no discussion whatever of possible partnership at the first interview with respondent. He could not say how many panel patients had been allocated to Dr. Doyle by the Allocation Committee on Jan. 1st, 1929. It might have been over 1500, but he did not admit that that proved that the committee regarded Dr. Doyle as a partner or prospective partner. His own panel list had never been full or complete and he was prepared to prove it: the figure of 2503 was the "reputed" and not the "actual" figure.

In reply to the Legal Assessor, he said that when cards were brought to his surgery with the name of a doctor on them he had never given any authority to Dr. Doyle to erase the name, and he had never seen it done, nor known of its being done. Two of the cases had been discovered before Dr. Doyle left, but he had not personally taxed Dr. Doyle with them. When cards were brought in with no name on them complainant usually signed them, but in his absence cards were usually handed to the panel clerk for subsequent discussion between the two doctors. All panel cards had—or should have—passed through complainant's hands. If numbers were exceeded the onus was on the panel committee to give notice to reduce; he had never received such notice.

Three panel cards were put in evidence, two showing erasures, and complainant declared that he had never given authority for the erasures.

In answer to Dr. H. B. Brackenbury, through the chair, complainant said that Dr. Doyle had signed cards in his own name, not "pro Dr. Mitchell." He did not know at all whether Dr. Doyle's name had appeared on the county medical list as an assistant or a separate practitioner.

Horace Priest and Mrs. Lily Sidaway testified to their statutory declarations and insurance cards, on which Dr. Doyle's name had been substituted for Dr. Mitchell's.

Mr. Dan Adams Priest and Mr. Benjamin Troman, secretaries of women's clubs, testified to their statutory declarations, and stated that Dr. Doyle had asked them for lists of club members. Mr. Troman said that respondent had said he had already 200 members out of that club and had added "You'll see what you can do," presumably implying a desire to be appointed doctor of the club.

Miss Daisy Homer appeared as a witness on behalf of her mother, who was ill. She had been present throughout the whole interview between her mother and Dr. Doyle. Dr. Doyle had called and said he and Dr. Mitchell had split partnership and he had started a club on his own which her mother might join; she might also tell other people in the house and other panel patients.

Mrs. Florence Plant and Mr. Samuel Jackson testified to their statutory declarations. Mrs. Plant said she had got the impression from Dr. Doyle that Dr. Mitchell was retiring and had called at the latter's house to ask if it were true. Mr. Jackson said that Dr. Doyle had told him to get transferred to his panel list and he could cure him. He had paid for three bottles of medicine from Dr. Doyle but had been Dr. McQueen's panel patient all the time.

Mr. Norman Leslie Clark and Mrs. Sarah Ann Hill testified to their declarations, Mrs. Hill stating that Dr. Doyle had asked her if she had any medicine from Dr. Mitchell for her son; she had never at any time complained about the medicine. Dr. Doyle had told her it was no good and told her to throw it down the sink and she had done so.

Mrs. Kate Maguire recounted an argument in her presence between the two doctors as to whose panel patient she was. She had never at any time been on Dr. Doyle's panel. Dr. Doyle had said "Take no notice of him; the old man's going off his head." He had not said "going off the deep end."

Miss Mary Constance Wilkinson, the dispenser, confirmed the material facts. She had heard Dr. Doyle say to a patient (Frederick Rock) that Dr. Mitchell would soon have him stiff and cold. She had dispensed for Dr. Mitchell about three years before Dr. Doyle arrived, and neither Dr. Mitchell nor his former assistant had ever made any complaints.

In reply to the President, she said that Dr. Doyle's complaint had been that she had omitted some magnesium sulphate from a bottle of medicine; no steps had been taken to test for magnesium sulphate. She maintained that this drug had never been put on the prescription.

In reply to the Legal Assessor, she identified Horace Priest's panel card and denied absolutely having made the erasure and substituting Dr. Doyle's

name. She had not seen the card before the erasure had been made.

Mrs. Mary Evans testified to her statutory declaration describing canvassing by Dr. Doyle.

Dr. T. F. Tibbetts, chairman of the Dudley Panel Committee, testified that a panel doctor, at the relevant period, was allowed 4000 patients, 2500 for the principal and 1500 for the assistant. It was not true that the number for an assistant was limited to 1000.

In answer to the President, he said that the numbers were estimated by the amount paid quarterly; it was not an absolute number of names. In answer to Sir Robert Bolam, through the chair, he thought that a panel of 3000 would probably mean a number of credits of about 2800. In answer to Dr. H. B. Brackenbury, through the chair, he agreed that it was the practice in Staffordshire to allow the principal to increase his panel from 2500 to 4000 if he took an assistant, and there was no ruling as to how many belonged to each.

Dr. Doyle, examined by Mr. Ward, declared that he had taken the assistantship with a view to partnership and had signed forms for the insurance committee, with Dr. Mitchell's knowledge, stating that he was in partnership. At that time Dr. Mitchell had said that this was stretching the regulations slightly, but that, as Dr. Doyle was going to buy a share, it did not matter. The allocations had been made to respondent personally and his name had appeared as a separate doctor on the medical list. On Norman Clarke's card Dr. Mitchell's name had been crossed out by him as part of the routine of the practice; he had signed some hundred cards, some blank and some with Dr. Mitchell's name on them. No complaint or comment had ever been made and Dr. Mitchell had had all the fees. He emphatically denied ever erasing anything from Horace Priest's card and was certain that the handwriting of the name of "Dr. Doyle" was not his writing, though the signature "A. F. Doyle" was. He had asked the secretaries of the clubs to put his name up as one of the doctors who might be chosen by the members as their doctor; he did not consider that he was doing anything wrong. He had been treating members of the clubs ever since he had been there. A list of members would not have been the slightest use to him and he had never asked for it. He had said to Mr. Troman that if he did not get on the club he would be forced to form a club of his own. He had no need to ask for help in getting patients; he had 2000 on his list at the present time. About 800 of the original 1500 panel patients had transferred back to Dr. Mitchell and 500 or 600 new patients had joined him from other doctors. He denied the canvassing charges. He maintained that the district was seriously under-doctored, and that Mrs. Hill had complained to him that the medicine was not doing the boy any good. He had never told her to put it down the sink, but he had known the medicines were not being dispensed correctly and had told her to send for something else. He had not blamed Dr. Mitchell for it and had not told Dr. Mitchell that he had changed the medicine. On many occasions he had watched Miss Wilkinson dispense and noticed her putting in less than he had ordered. No prescriptions were ever kept. He had never discussed Dr. Mitchell with Mr. Rock or any other patient. He had always had regard to the etiquette of his profession in all his dealings.

Cross-examined by Mr. Carthew, respondent said that he had been a stranger to the district before he went as Dr. Mitchell's assistant. He asserted that every one of the doctors in the neighbourhood was against him. He knew that Dr. Mitchell had a son a medical student, not that he had always had a salaried assistant. If he had complained to Dr. Mitchell about the dispenser she might have got into more trouble; he was not in the habit of going behind people's backs.

The Legal Assessor asked if respondent thought she was misdispensing from incompetence or wilfulness, as he had said he thought she might improve if he spoke to her direct. Dr. Doyle replied that he did not wish to make any suggestion. Mr. Carthew quoted respondent's evidence "I do not know whether she did it carelessly or from some other reason" and asked what reason. Dr. Doyle suggested laziness, as the magnesium sulphate was in a heavy bottle on a high shelf. Pressed by Mr. Carthew, he said he did not wish to give any other explanation. Complainant had promised him an appointment, but had put off the preparation of the agreement from day to day until he had sprung the bombshell of instant dismissal, leaving him with a panel of 1600 on his hands and nowhere to go. He had no recollection of Horace Priest among his many patients, but could only suggest as likely to erase a name those people who handled the cards—viz., the patient, his mother, the dispenser, or Dr. Mitchell himself. He took it for granted that he had authority to cross out Dr. Mitchell's name and substitute his own.

Mr. Carthew established that the usual arrangement in the district was for each club to have one doctor, appointed by a two-thirds majority of the members, and the club was known as "Dr. So-and-So's club." Two doctors were only found in combination on a club if they were in partnership. Dr. Doyle explained his request to be appointed medical officer to Dr. Mitchell's clubs as due to his ignorance of their rules and customs at that time; he would not so apply now, but did not admit that such an action was an improper one and an attempt to filch away patients. He would have no objection to any other doctor applying to his club, because he knew the application would have no chance. He had prescribed for and charged Jackson, knowing that he was Dr. McQueen's patient; he had disliked doing it but Jackson had urged it. Dr. Mitchell knew about it and took the money; respondent assumed that Dr. Mitchell knew Samuel Jackson was Dr. McQueen's patient. He had said "Here's two shillings for a bottle of medicine from Samuel Jackson"; he flatly denied that Dr. Mitchell was ignorant of the whole transaction.

In answer to the Legal Assessor, respondent agreed that the letter written by Dr. Mitchell to him after the interview contained no reference whatever to any idea of partnership. He would never have considered going but for the verbal promise of a partnership and had accepted the position on that letter because he relied on Dr. Mitchell's word. He had signed Priest's card with the erasure on it, but had not mentioned the erasure to anybody. He did not remember whether he had had other cards with erasures on them.

In reply to members through the chair, Dr. Doyle said that all the patients of whom he had spoken to the club secretaries had come to him in the five or six weeks after he had broken with Dr. Mitchell. He had worked on the panel for about three years and when he had written to the clerk of the insurance committee he had believed that the clerk could give the patients a chance to return to Dr. Mitchell. The clerk had called about three days later and explained, and suggested that a card of change of address be sent to all patients on Dr. Doyle's list. No other information had been given, and there had been nothing in the notice to suggest any breach with Dr. Mitchell. Dr. Mitchell ran an insurance practice of 4000 with the assistance, successively, of Dr. Roberts, Dr. Clark, and Dr. Doyle, and each of these gentlemen obtained their patients from Dr. Mitchell's practice. Dr. Doyle declared that Dr. Clark had personally transferred the practice to him, but for no consideration. He knew that there was a definition of a partner in the National Health Insurance Act; he had never been allowed to bring himself within that definition. He had offered to pay Dr. Mitchell for his share of the panel. He considered that if he had left the district he could have transferred his panel to someone else for a consideration.

Dr. Eason, through the chair, asked who had made the statement to the Staffordshire official that

Dr. Doyle was a partner. Mr. Ward replied that the documents had been asked for and refused by the Insurance Committee.

Re-examined by Mr. Ward, Dr. Doyle said that the contract with the National Health Insurance made him stay in the district or provide a deputy for three months after giving notice. He had had a letter from Dr. Mitchell on Oct. 4th, 1928, saying that as the joint panel slightly exceeded the number allowed for one practitioner and an assistant, Dr. Doyle would have to act as a salaried partner, on which an agreement would have to be signed. In April Dr. Mitchell had put forward a form of agreement offering the status of partner but with a clause saying that there should be no claim on the goodwill of the practice. This Dr. Doyle had refused to sign. After the split Dr. Doyle had taken his solicitor to see the clerk of the Insurance Committee to see what should be done, and he had followed the clerk's instructions precisely.

Mr. Alfred Lovatt, Dr. Doyle's solicitor, testified to being present at the interview between his client and the clerk to the Insurance Committee.

Mrs. Florence Doyle confirmed Dr. Doyle's account of the interview with Dr. Mitchell, stating that Dr. Mitchell had promised a two-fifths share in 12 months. This was their first interview.

Cross-examined, she could not remember Dr. Mitchell's words, but he had said that he had been considering taking a partner and that he would offer a partnership. The 12 months might have been to give Dr. Mitchell time to consider whether he liked Dr. Doyle or not. The offer had not been made until after an hour and a half's conversation, and Dr. Doyle had repeatedly said that he would not go to Old Hill without the promise of a partnership.

Sir Robert Bolam asked through the chair if the price of the partnership had been discussed. Mrs. Doyle replied that she did not think so, but that she had not been present the whole time.

Arthur Harvey Cole, a hairdresser and a patient of Dr. Doyle's, confirmed Dr. Doyle's account of the complaint about his third bottle of medicine. Cross-examined, he said he did not know whether the mistake was in the prescribing or in the dispensing. Dr. Bone pointed out that witness had said he had put the medicine down the sink, whereas his statutory declaration said that Dr. Doyle had taken it back to the surgery. Witness said the declaration was right.

Mrs. Ellen Davis testified to complaining of the medicine to Dr. Doyle. Cross-examined, she said she had no idea what was wrong, but one bottle had smelt after a day or two; the first few doses had been all right. In reply to the President, there had been nothing wrong when she had received it.

Frederick Rock testified to his statutory declaration, saying that his wife had obtained relief from some bottles of medicine and not from others. He had never discussed Dr. Mitchell with Dr. Doyle.

Mr. Ward and Mr. Carthew then addressed the Council. After deliberation in camera the President announced that the facts alleged against Dr. Doyle had not been proved to the satisfaction of the Council.

The Case of Hans-Raj, registered as of 40, Clifton-street, Bilston, Staffs., M.R.C.S. Eng. 1925, L.R.C.P. Lond. 1925, who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you have canvassed patients of Fakir Chand, M.B., for whom you formerly acted as assistant, with a view to their transferring from his panel to yours, and in particular the following patients—viz.: (1) In or about the month of February, 1929, Florrie May Watts. (2) In or about the month of March or April, 1929, Arthur Jeavons. (3) In or about the month of May, 1929, Joseph Caddick. (4) In or about the month of May, 1929, William Lewis. (5) In or about the month of June, 1929, Thomas Blewitt. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainant was Mr. Fakir Chand, M.B.; Mr. Hans-Raj was represented by Mr. Freibusch, solicitor. Mr. Chand conducted his own case. He related his medical history and his association with the respondent, and put in five statutory declarations from patients supporting the charge of canvassing. He was unable to produce witnesses. After cross-examining complainant, Mr. Freibusch submitted that he had no case to answer. After deliberation in camera the President announced that the Council agreed with this submission, and the case was therefore dismissed.

Alleged Seduction of a Patient: the Case Dismissed.

The Case of Abraham Hipwell, registered as of 1, Homefield-place, Heavitree, Exeter, L., L.M. 1906, R.C.P. & S. Irel., D.P.H. Liverp. 1909, who had been summoned to appear before the Council on the following charge:—

"That you abused your position as a medical man by seducing a patient—namely, Mrs. Hilda Annie Spike—whom you were attending professionally, and also by behaving or attempting to behave improperly to her on divers occasions subsequently while she was still your patient. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainant was Mrs. H. A. Spike, who was represented by Mr. F. S. Laskey, counsel, instructed by Mr. J. C. M. Dyke.

Dr. Hipwell attended in answer to his summons, and was represented by Mr. H. A. Singleton, K.C., and Mr. T. C. Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley.

Mr. Laskey said that Mrs. Spike was a widow whose husband had been killed in 1917; she had two sons, aged 15 and 17 respectively. Respondent had been her regular medical attendant. Until 1927 she had enjoyed good health, but in that year she had had a vulval cyst which had been removed in August in a nursing home. She had to return for further operative procedures in September. Respondent had attended her after she had left the home once before Oct. 27th, but had not examined her. About a week before that date she had asked for an examination to be sure everything was all right. On that day he had called and seen her in bed. A servant was present in the house, but Mrs. Spike had not been anxious to have her in the room, and neither party pressed the suggestion. The doctor had held her on the bed with his left hand and had connexion with her. She had made no effective resistance, but she maintained that at this time her will had been entirely dominated by that of the doctor. It had all happened very quickly. In consequence she had become pregnant, of which fact she had become certain in January, 1928. Respondent had then four times supplied her with medicines; she had kept the three last bottles, which were in evidence. Of these the first had contained Epsom salts, the second contained ergot, and the third was innocent, containing a mild tonic and Epsom salts. At the end of January she had again assured the doctor that she was pregnant; the doctor had performed some operation from which she had suffered intense pain, and there had been an abortion. Since then her health had been seriously affected, and she had attended several doctors, including respondent. Her explanation was that her illness was due to the doctor's actions, and he ought to cure her. In March, 1928, she had asked definitely if she could be cured, and told him he ought to help her; he suggested paying a sum of money towards her expenses, and in April or May a solicitor acting on the doctor's behalf had called on her, offered her a loan—which was refused—and finally handed her £30 unconditionally. In March a series of X ray photographs had been taken after a bismuth meal. The photographs handed to Mrs. Spike by Dr. Hipwell were not complete; she had seen the negative of the one missing one, which showed the uterus. Subsequently, when she had asked for this picture, respondent had said that he did not possess it. The photographs had been handed to complainant's medical adviser. Her brother, in August, 1929, had interviewed respondent with her; he had said, "This

will be a very serious thing for me." In December complainant's adviser had written to respondent threatening proceedings; his advisers had repudiated liability and suggested that complainant's motive was blackmail. Her advisers had then stated that she only wished to be cured, by respondent if necessary, but at all events to have her expenses paid.

The complainant, examined by Mr. Laskey, testified to her statutory declaration. She had known Dr. Hipwell since 1920 or 1921. On Oct. 27th, 1927, respondent had examined her internally, and said that the womb was a little lower than it should be. He had told her to get out of bed, and she had obeyed. He had put his hand under her nightdress, an action which at the time she had thought was for examination. He had directed her to lie on her back on the bed; then assaulted her. After the assault he had said, "I am sorry, it is all my fault." He had instructed her to use a syringe. She had not screamed, as she had been under his power. Respondent had leant over her, fixed his eyes on hers, and she had felt she had no power to resist. He had then left the house. Subsequently, in December, respondent had treated her for a boil. She confirmed counsel's account of her pregnancy and the consultation in January. Respondent had given her the medicine referred to in counsel's opening, and subsequently had examined her at his surgery and performed the operation which had led to the abortion. In showing her the skiagram now alleged to be missing, respondent had said that it was a photograph of the stomach, but witness thought it represented the uterus. She had taken respondent the bill for the photographs, and he had paid her the amount in notes. In January she had gone to another medical attendant who had dropped her case after a short time, and she had returned to respondent. In March she had threatened to claim damages, and he had offered £20. She had asked that compensation be paid through a solicitor, and £30 had been paid. She had given no receipt. On another occasion, in the summer of 1928, respondent had asked her to lie on the sofa in his surgery, and she had refused. On other occasions when he had been examining her he had undone his clothing, and she had told him to behave himself. Her illness in 1928 and 1929 had consisted chiefly of repeated vomiting and pain in the left side. Respondent had never sent an account for his services.

Cross-examined by Mr. Singleton, witness admitted having written a letter to respondent on May 10th, 1928, asking for a loan and for a consultation. She admitted having asked for more money from respondent's adviser in April, 1929. In December, 1929, after the visit with her brother, she had visited respondent's surgery again with her son and had asked to see his wife; he had telephoned or pretended to telephone to the police.

The doctor had put his arm round her waist, before October, 1927, just once; he had not had the chance to do it again. She had not complained to respondent that the surgeon had ruined her or disfigured her. She considered that respondent had exercised hypnotic influence; she presumed that the seduction was due partly to that and partly to her weak state after the operation. She had not visited the surgery on Oct. 27th. The medicines were all in the bottles she had received them in; the doctor had given her prescriptions which she had taken to a chemist. The medicine in the bottles was the original medicine. He had said, "Take this for my sake." She had kept the bottles for over two years, but had never taken any. She had not kept them for any special reason, and had not changed the contents of the bottles. She had not kept any more. She had visited the surgery on Jan. 27th, when he had performed some operation; he had then told her to go away at once as she would be very ill. She did not visit the surgery next day. She admitted that in January, before the 27th, she had been having slight three-weekly periods. She had asked respondent if at that time it was possible to have periods when pregnant, and he had said it was not. Respondent had suggested the X ray examination "to clear himself"; she had threatened in March to take her life if she suffered much more pain. She denied having ever been treated for her nervous temperament—which she admitted. She denied that she had continually asked respondent for money to go away for a rest, according to a second doctor's advice. She alleged that a short time before her letter asking for money respondent had offered her £25 in his surgery; she had refused, but her expenses had increased and so she had written the letter. She could not give any details of this expense. The money paid by the solicitor had not in any way been given as hush-money. She had continued attending respondent regularly until September, 1929. She had gone to his solicitor again in April, 1929, to discuss her expenses. In spite of her solicitor's letter threatening proceedings unless respondent suggested some form of compensation, she denied that her object was money "in the way Dr. Hipwell put it."

Re-examined, she said that she had been ordered two abdominal belts, one in 1928 and one in 1929; she had gone to see respondent's solicitors just after receiving the second account, in response to their invitation to inform them if she incurred any further expense. Witness stated that respondent had himself handed the medicines to her, and that she had not obtained them from a chemist.

Mr. Frank Edward Street, brother of the complainant, examined, stated that her health had been good until the end of 1927. In the early part of the summer of 1929 he had interviewed respondent with his sister. Cross-examined, he admitted that he had said twice that he had not come for blackmail, but had said at the end of the interview that he was very dissatisfied and would put the matter in other hands. He had gone to respondent to hear his account of the matter. He said that, from his sister's account, he thought that respondent could only have been attempting to procure abortion, but admitted that he had not said this in his statutory declaration. Respondent had denied performing an operation, and had shown an object which he had said was a torch, which he said he had used. In reply to a question through the Chair, witness said that he had not known that his sister was at all in want of money.

Mr. Singleton addressed the Council before calling witnesses for the respondent. He said that, but for the payment of the £30, the case would obviously be unproved. Respondent's solicitor had made the payment on his own initiative. If he had made no payment, the charge would never have been brought. Moreover, respondent had acted unwisely in continuing to attend the complainant. The medicine containing ergot had been prescribed for frequent periods, and counsel proposed to show that the bottle produced was not that in which it had been dispensed.

Dr. Hipwell, giving evidence on his own behalf, stated that complainant's record showed attendance since 1922. She had complained that she had been "ruined" by the second operation at the nursing home, and he had examined her on that occasion, about Oct. 10th, in his consulting-room. He had not visited her on the date of the alleged assault; she had visited him, and he had prescribed bromide and arsenic for nervousness. He had never had intercourse with her at any time, nor had he put his arm round her waist. The labels on the bottles were all in his writing. The ergot prescription had been one for a chemist, as he had stocked no ergot. All the labels on bottles dispensed by him were numbered in series, corresponding to the date; all the three bottles produced were dated June, although they contained medicines prescribed in January. The object of the ergot mixture had been to check flooding. On Jan. 23rd, 1928, complainant had been suffering from metrorrhagia and fortnightly periods, according to a note made at the time. She had not been pregnant and had not suggested she was pregnant until March just after he had made an internal examination

He had not examined her in January, and had never operated for any purpose at all. Her first suggestion against him had been on March 8th or 10th; she had then said that he must have used some instrument, "because he had hurt." She had also accused him at that time of causing her pregnancy. She had then been rather hysterical and suffering from a certain amount of pain; witness had suggested a second opinion or an X ray. No photograph was missing; he had paid for the films. No photograph had ever been taken of the uterus. The second opinion had prescribed a rest and change. Complainant had then said she was worried about money matters, but witness had never offered her £25. He had visited his solicitor, Mr. F. P. Cottey, after receiving complainant's letter, and Mr. Cottey had paid her money with witness's knowledge in May, 1928. Respondent had continued attending her as a patient until September, 1929. She had asked him for more money in May, 1929. She had collected and paid him a small sum from some sickness club, but had paid him no other fees. At the interview with the brother the only suggestion had been that of hurting complainant; seduction had not been mentioned. Witness had pointed out that he could have performed no operation; no preparation had been made, and no instrument used, and the couch was an unsuitable one, covered with chintz. He had shown an electric torch that he had used. On Dec. 2nd, 1929, Mrs. Spike and her son had visited him. She had first said that she wanted witness to cure her, and he had refused. She had then refused to go without seeing his wife, and he had telephoned to the police. She had then gone away, but had come to his door on Dec. 7th and handed him an empty envelope, with the address of the General Medical Council written on the back. Witness had occasionally helped patients by advancing them money. He had allowed complainant to have £30 because her financial worry had been making her condition worse. He had helped her in every way throughout.

Cross-examined, witness admitted that he was not a rich man, and that complainant had not asked for money or assistance before 1928. He had not regarded her demands at first as directed to obtaining money, but had thought she wanted to be cured. She had blamed him for her illness earlier, and he had walked out of her house and refused to treat her; she had retracted her accusation after going into a nursing home and being treated by Dr. Roper. She had not made the accusation to him personally in May, whatever she had said to Mr. Cottey. Asked why he had put the matter into Mr. Cottey's hands, he said he had wanted her to get mentally better, but that if he had handed her money he would have admitted himself liable for some injury. He had chosen the solicitor as a means of helping her to get better; she had not then been making accusations, but had threatened to do herself an injury. He had never helped other patients through a solicitor, but they had not been hysterical or invalid. He had often advised her to go to another doctor. He had no record nor recollection of seeing her in her room at any time. He had never shown her any X ray negatives. He had never told Mr. Cottey to tell complainant to come back if she had any further expenses. At the interview he had told complainant that her statements were a figment of the imagination. He had not taxed her with lying, although she had demanded money more than a year before, and he had paid it; he had tried to prove that the injury was an imaginary one. He had not sent in an account after the end of 1927, because he had been giving her money to carry on.

Re-examined, he said he had never made up an ergot medicine. To a question through the chair, he said that the accusations had preceded the payment of money, having been made in March.

Mrs. Winifred Kate Hipwell, wife of respondent, said that her relations with her husband had always been happy and normal in every way. Complainant had accosted her in the street and accused respondent of "nearly killing" her.

Mr. F. P. Cottey stated that he knew of other cases in which respondent had advanced money to patients. On May 11th, 1928, respondent had seen him in his office and produced the letter from complainant asking for a loan, and described the charges she had made against him. In the afternoon witness had seen the records of the case. The payment had been left absolutely to him. When he had left the surgery he had not decided whether or how much to pay her. He had drawn £30 from his office and, after seeing Mrs. Spike, had paid her, and had informed respondent by telephone. No sum had been discussed between him and respondent, but only certain expenses complainant would probably incur. At his interview with her she had said she would need money for her rest, and did not like to touch her sons' money or some she had had from her father. He had not asked for a note of acknowledgment, and had prepared no document of any kind. He had acted for respondent on his own advice. Complainant had not made any accusation on that occasion. Witness took entire responsibility for the payment. He had known that a suggestion of accusation had been made in March, but should never have paid any money if a charge had been made at the interview. He would never pay money for the withdrawal of a charge. In April, 1929, complainant had come to his office to ask for more money. He had met her a second time that day, coming out of his office with some third party. On a later occasion he had visited complainant's solicitors at their request, and they had suggested a sum of £300 or £400 as compensation. He had immediately advised respondent to consult Messrs. Le Brasseur and Oakley. Mr. Street, in visiting him, had complained of "injury" to his sister, and had not mentioned damages; he had advised him to see respondent personally. Later in the year complainant's solicitors had informed him that they had dropped the case, and that another firm had been instructed and had sent for the medicine. Cross-examined, he assured counsel that he would not have touched this matter if he had had the slightest suspicion that anything was wrong. With the exception of one reference by complainant to an illegal operation, no charge had ever been made. The surgery was only about 10 ft. by 10 ft.; every sound made in it could be heard outside, and anyone was liable to come in at any moment. He had thought that he was merely dealing with a genuine application for a loan.

The Council, after deliberation in camera, decided that they did not desire to hear any further evidence in defence. Mr. Laskey thereupon addressed the Council. After further deliberation in camera, the President announced that the Council had not found the facts proved to their satisfaction.

Adultery Proved in the High Court.

The Case of Andrew Alexander Fyffe, registered as of Martham, Great Yarmouth, M.R.C.S. Eng. 1912, L.R.C.P. Lond. 1912, who had been summoned to appear before the Council on the following charge:—

"That you abused your position as a medical man by committing adultery with Doris Esperanza Rosemary Chicheley Ferrier, a married woman, with whom you stood in professional relationship, of which adultery you were found guilty by the decree of the Probate, Divorce and Admiralty Division (Divorce) of the High Court of Justice, dated Dec. 3rd, 1929, in the case of Ferrier *v.* Ferrier, Thorp and Fyffe in which you were co-respondent. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

There was no complainant in this case.

Mr. Harper, solicitor to the Council, outlined the facts as stated in the charge. He put in the transcript of the shorthand note taken at the trial, the evidence in which had occupied eight days. This showed that a special jury had found after five minutes' deliberation that adultery had been committed; also that respondent had been in professional relationship with Mrs. Ferrier. He read extracts from the summing-

up. He summarised an account rendered by respondent to Mrs. Ferrier for professional services.

Mr. Felix Denny, counsel, instructed by Messrs. Smith and Hudson, appeared for Mr. Fyffe, who attended. Counsel applied to the President to be allowed to go behind the judgment of the High Court and disprove the adultery. The President ruled that the facts as found proved by a competent court must stand established; the Council was not competent, nor had it time to retry the issue. Mr. Denny said that respondent categorically denied adultery. Respondent had charged nothing for professional services until Mr. Ferrier had started, behind his back, inquiries about his relationship with Mrs. Ferrier; respondent had then, in "righteous indignation," submitted an account, on which he could not possibly have recovered at law. Respondent, in evidence, denied adultery. In reply to cross-examination, he said that he had independent evidence that, on the only occasion on which adultery was proved by an eye-witness, Mrs. Ferrier had been suffering from metrorrhagia. He admitted his account of his professional relationship, given at the trial.

The Council, after deliberation in camera, directed the Registrar to erase the name of Mr. Fyffe from the Register.

Colonial and Foreign Students' Committee: American Medical Students.

The members of this committee are as follows: Sir Donald MacAlister, President (Chairman), Sir Robert Bolam, Mr. Eason, Dr. Fawcett, Mr. Jamieson, Mr. Monsarrat, Sir Humphry Rolleston, Dr. Stopford, Sir Holburt Waring, Mr. Miles, Dr. Lorrain Smith, Sir Norman Walker, Dr. Coffey, Dr. Dixon.

The following report was made to the Council on the applications of American students to study medicine in Great Britain and Ireland:—

American students seeking medical education in this country fall into four classes: (1) Those who propose to take the whole of their instruction in this country and who must therefore go through exactly the same curriculum as our own students. No difficulty arises in such cases; each body is responsible for its own regulations. (2) The second class is the result of the different arrangement of the medical curriculum in America under which all students have to attend for two (in some three or four) years at a college of literal arts where along with other subjects (English, a foreign language, psychology, &c.) he studies biology, chemistry, and physics. At this stage some students seek admission to our schools and the question of recognition of these courses of study (and examination) arises. (3) A third class consists of students who have been admitted to an approved medical college, have studied one or two years, and having left these colleges for various reasons now desire to complete their course of study and to qualify in this country. (4) A fourth class consists of those students who have passed the earlier examinations for the Diploma of the National Board of Medical Examiners of the United States of America. This Board has a special reciprocal arrangement with the Conjoint Boards of England, Scotland, and Ireland under which mutual recognition is accorded to their corresponding examinations.

The difficulties which are confronting our deans and registrars are for practical purposes in connexion with classes (2) and (3). It is, of course, competent for the governing body of any school of medicine to admit any student it pleases, but it is understood that the number of applications and the difficulty of evaluating the evidence of curriculum and examinations which the students present make it desirable that there should be some clearly understood common plan of action. Fortunately, there are in the United States voluntary associations, such as the Council of Medical Education and Hospitals of the American Medical Association, the Association of American Medical Colleges, the National Board of Medical Examiners of the U.S.A., and the Federation of State Boards, all of which have established themselves in the confidence of their own people and who are willing to coöperate with us in securing a general scheme which may be acceptable to us both. A sentence in a letter dated May 12th, 1930, from Dr. Ray Lyman Wilbur to Dr. Gray, of the American University Union, tersely sums up the American viewpoint: "I am very much in favour of a certain percentage of our American students studying abroad, but I think they should be from our better students and should not belong to the inferior group." That may be taken as equally the view of those who have considered the matter on this side.

The Committee ask for a further remit to consider and to make to the Council at the November session detailed suggestions for coöperation with one or more agreed body in the United States.

May 29th, 1930. DONALD MACALISTER, Chairman.

Abstract of a Memorandum to the Committee by the Registrar.

It is common knowledge that the General Medical Council, in common with universities and medical schools in this country, have recently received hundreds of applications from students from America to be allowed to take out their course of study and to qualify in this country. It has been difficult in the absence of authentic information to assess the value of the certificates of general education which have been forwarded and also of the evidence of having passed an examination equivalent to a pre-registration examination in elementary chemistry and elementary physics. Some students who have taken out part of their curriculum at reputable institutions in America have after a certain time received "honourable dismissal," and it is not easy to ascertain exactly what this implies. The matter is further complicated by the fact that there is an arrangement between the Conjoint Boards in this country and the National Board of Medical Examiners in America, whereby those who have passed the examination of the one may be admitted without question to examination by the other. If students who for one reason or another are not considered acceptable in America can come to this country and obtain a qualification, which it is understood carries considerable weight in America, and then go back and demand to be allowed to sit for an examination which, if passed, entitles them to practise in about three-quarters of the United States, difficulties will be sure to arise. In the early part of this year the Council adopted a form of letter which was sent to American applicants, with the result that as a rule little more was heard of most of them. The letter was as follows:—

"In reply to your letter of the..... I have to say that no application from an American student can be considered unless the certificate or transcript of record is endorsed by or accompanied by a statement from the Dean of the Faculty of Medicine of a university which is a member of the Association of American Universities to the effect that the holder would be admitted to the Faculty."

A letter, dated March 13th, 1930, was received from the chairman of the Committee on Recommendations to Medical and Dental Schools of New York University in which that official said that it was the duty of his committee to investigate the claims of each intending student at his university, and quoting a letter of the General Medical Council to American applicants in England which had been received by a student of New York University. The chairman of the New York University Committee went on to say that while some of the students making application for admission to European, and especially British, schools, were not good material, others really wished to study in another country to enjoy the benefits of education abroad. In the interests of this group he points out that the endorsement required by the General Medical Council from deans of the several American medical schools cannot be obtained.

To this letter an official reply was sent, stating that it has not been easy for the Council to decide whether

the numerous applications for admission received from the United States had been from students who, from the educational and personal point of view, deserved admission.

"In addition to applicants who have not entered upon their medical curriculum in America, but have passed examinations with that object, there are some who, after a period in an American university or school have received 'honourable dismissal.' In view of the fact that those who obtain the qualifications of the Conjoint Boards in England, Scotland, and Ireland are entitled to take the examination of the National Board of Medical Examiners and, if this is passed, to obtain registration in the majority of the United States, it is highly desirable that no American students, who for one reason or another have not been considered satisfactory in their own country, should be admitted to medical schools here."

With reference to students who wish to study abroad, not because they cannot gain admission in America, but because they wish to enjoy the benefits of education abroad, the Registrar suggested that there should be no difficulty. The letter concluded by stating that the whole question would come before the Education Committee of the Council, and inviting information as to what documents American students who wish to study here should be asked to produce: (1) if they have never obtained admission to an American medical school, (2) if they have received "honourable dismissal" from an American school, and (3) if they have been satisfactory students in America and desire to enjoy the benefits of education abroad.

Dr. W. C. Rappleye, the Director of Studies of the Commission on Medical Education organised by the Association of the American Medical Colleges, who was present at the meetings of the Council held in May last, was also asked for his views, and replied as follows:—

"Thank you very much for your last letter telling about the action of the Council regarding applications from American students. I notice that the statement required is 'from the dean of a medical school which is a member of the Association of American Universities.' Only 55 of the 70 approved medical schools are in universities which are members of that Association, but all of the approved medical schools (formerly designated as Class A) are members of the Association of American Medical Colleges. I mention this because you may get a statement from one of the 15 schools which does not belong to the University Association, but which is in equally good standing and a member of the Medical School Association.

"The most common cause for not accepting applicants for admission to medical schools here is designated 'class full.' Many students rejected for that reason have met all the requirements for admission to that school, it is the least objectionable designation by which students can be rejected for personal or racial reasons. I mention this, also, because you may get statements from some of the deans over here that they would have accepted a given student if the class had not been filled.

"Possibly the best way to deal with this problem of American students in the British schools would be for you to accept no students except those who have had one or more years in an American school, and then only on evidence that the work here had been entirely satisfactory. I suppose it would be necessary to make some exceptions. As you know, there are quite a number of American students who have failed in their medical courses here that are now studying in Europe. We are very anxious to have good students from America spend time in the British schools either as a part of their undergraduate training or later in graduate work, and everyone wants to be sure that it is our good students that go over and not those who have done poorly here."

On April 22nd a reply was received from the National Board of Medical Examiners to the letter sent to them, in which they said that the matter would be brought before their executive committee which would meet on April 15th, after which they would write again. In the meantime the circular letter by the Council sent to applicants was modified by substituting the words "the dean of a medical school which is a member of the Association of American Colleges" for "the dean of the faculty of medicine of a university which is a member of the Association of American Universities."

The Registrar's memorandum closed by quoting a letter received from the National Board of Medical Examiners on May 3rd expressing appreciation of the efforts made to admit only well-qualified candidates into the medical schools of Great Britain. The difficulty was admitted of deciding in this country as to a student's eligibility who had not applied for admission to any school of medicine in the United States.

Memorandum on the Registration of Students.

A memorandum on this subject was submitted to the committee by Sir Norman Walker, the first portion of which dealt with the forms which applicants for registration as medical students are enjoined to fill up. Sir Norman Walker pointed out that the form did not receive the proper consideration by the person signing it. For example, it is not unusual to find that the parts which the teacher was unable to certify were none the less certified to by the omission to strike out certain lines in the certificate. But the gist of Sir Norman Walker's memorandum was to point out that the applications now being received from students in the United States makes the need of looking into the matter more urgent.

"The preliminary examination in general education," wrote Sir Norman, "is quite clearly within the sphere of the Council's duty under the Medical Act, but the preliminary examination in chemistry and physics is not quite so clear, and it is common knowledge that many of the universities have a marked preference for the plan of conducting the whole of the teaching in these subjects within the curriculum. The American applications are raising some difficult points, and there is a danger lest the Council should seem to interfere with the rights and prerogatives of the British medical schools. These rights, however, carry with them duties and responsibilities, and there are matters which should be seriously considered by their deans. It is presumably within the power of any school to impose any conditions it likes, even with reference to race, colour, or creed. The Medical Council has no such powers; if an applicant has passed a recognised general education preliminary, and a further recognised preliminary in elementary chemistry and physics, and has been accepted as a student by any recognised school of medicine in this country, his application for registration must be acceded to. But the deans should give very careful consideration to the international difficulties that may arise. It is well known that in the last 30 years there has been a remarkable elevation of the standard of medical education in the United States, and that the numbers applying for admission to their medical schools are straining their capacity to its limits. Thus, in 1927–28 there were 11,282 applicants, of whom only 6495 were accepted. If a student from some other country desires to study medicine in this country, and is accepted by one of our medical schools, the licensing bodies by custom accept the certificates of their teachers and admit the student to their examination. But the question is complicated by the fact that, in the American colleges, a great deal of critical attention is directed to the class work of the students, and those who, in their first or second year of work, are found deficient, receive an intimation that they will not be allowed to proceed, and a certificate that they have been 'honourably dismissed.' Persistent inquiry has elicited that the meaning of this is that they are not up to the scholastic requirements of the particular school, though there is nothing against their character, and it is this group of students that is responsible for the difficulties with which we are faced.

"As all such students have fulfilled the conditions of the approved (by the Council of Medical Education of the A.M.A.) medical colleges, which are that they must have a minimum two years (some require three or even four) in biology, chemistry, physics, and other subjects, one of which is a foreign language, they may quite properly be regarded as having fulfilled our conditions of general education, and the preliminary

examination in elementary chemistry and elementary physics. Further recognition depends on the individual licensing body in this country; some of the universities insist upon the complete curriculum being followed here, others quite legitimately recognise their chemistry, physics, and biology as equivalent to the first professional examination. If that is done the student would have to spend only four years in a medical school in this country, when, if successful, he would return to his own home with a British qualification. It is, however, to be noted that a large number of the American universities and several States require, in addition to the four years of medical study, a further year's service as an intern in a hospital or full-time work in a laboratory; thus the curriculum required for graduation is one year longer than ours. It seems highly desirable that we should not make any further concessions, and that the examinations in anatomy and physiology conducted by each individual American medical college should not be recognised as a means of further shortening the curriculum in this country. Considerable resentment is aroused by the return to his native country of a student who has completed his curriculum and obtained a British qualification in a lesser period than he would have required in his own country. This is more particularly the case in those countries where the possession of a British qualification gives the holder privileges of registration, and the result is that a student who has not completed his course for any reason in his own country gains precedence of those who have done so."

Other Committee Business.

Finance Committee.

Sir Holburt Waring moved, and Sir Norman Walker seconded, the adoption of the report of the Finance Committee which showed a satisfactory state of affairs, although there was a deficit of £7. This was anticipated and was due to the fall in the number of registrations in 1923, owing to the new regulations.

Education Committee.

In the absence of Sir Humphry Rolleston, Sir Farquhar Buzzard moved the adoption of two reports by the Education Committee. The former contained as an appendix the replies from teaching bodies to a letter asking how the pre-clinical subjects were taught in application to medicine during the three clinical years. The committee felt that the principle was still in a somewhat experimental stage and that it would be premature to come to a dogmatic decision as to the relative advantages of the several methods in use. Replies to questions on the examination in these subjects suggested that, except in applied anatomy, questions on pre-clinical subjects were seldom specifically set in final examination papers but that the questions set are believed to test the candidate's knowledge of these subjects. The second report dealt with certain matters referred to the committee. In reference to a letter received from the Society of Medical Officers of Health, on the place of preventive medicine in the curriculum, the committee recommended that the education and examination committees should examine the subject conjointly. The authorities of St. Thomas's and Guy's Hospitals had applied for permission to teach vaccination by their staffs, instead of by the public vaccinator. The matter had been referred to the Ministry of Health and the proposals put forward by the hospitals had been approved. A letter received from the Incorporated Association of Headmasters showed that the headmasters now agreed with the Council that a boy should be 17 years of age before entering a university or medical school. The headmasters thought that the first professional examination should be taken from school and that a pass in the suitable subjects in a Higher School Certificate should be grounds for exemption from the first professional examination. The committee observed that these points were matters for the licensing bodies subject to the Council's wish that these subjects should be studied in their relation to medicine.

Examination Committee.

Sir Norman Walker moved the reports of the Examination Committee. A memorandum and questionaire had been circulated to licensing bodies and teaching schools, urging the importance of pharmacology in the curriculum. The replies showed that interest was being taken in the inquiry. There was general agreement that a study of physiology should precede that of pharmacology, and in all universities except London and Wales the courses were held after the physiology examination had been passed. The average course was about 60 lectures. Most schools gave special attention to prescribing and agreed that pharmacognosy was little needed by the modern student. Practical pharmacy classes showed much variation, some authorities holding that the bedside was the proper place to observe the action of drugs, though all agreed on the need for practical instruction in dispensing and most supplied this during the clinical years. There was a tendency away from teaching pharmacology during the third year and then teaching no more of the subject. The replies to the question "Is the metric system used in teaching?" showed that it would be a long time before this system was adopted in this country. The report included a table showing the courses in hygiene and forensic medicine provided by the various licensing bodies; interesting variations were revealed. The visitation of the examinations in the latter subject being complete, the committee recommended that the Council direct that the reports of the examiners in medical jurisprudence be published as an appendix to the November report. No objection to this had been raised by the bodies concerned. The final examinations had been thoroughly inspected and the committee were thinking of turning their attention to the pre-medical subjects. Sir Norman Walker then introduced the annual tables for 1929, showing the percentage of passes in the various examinations and the exemptions from the curriculum or examinations granted by the various bodies during the year.

Restorations to the Dental Register.

The following names were restored to the Dental Register: Alfred Catlow and Harold Walmsley.

(To be continued.)

Nottingham City Mental Hospital.—On Jan. 1st last this hospital contained 967 patients (426 males and 528 females), in addition 62 boarded out in other institutions. Enlargement has become so urgent that a site of 24 acres has been purchased, and with the additional accommodation which will thus be provided it is hoped to house 500 patients.

Swindon Hospital Service.—It is hoped that the serious difficulties which for some years past have surrounded the hospital service of Swindon are now in a fair way of settlement. The question was recently considered by a conference convened by the chairmen of the Wiltshire public health and public assistance committees at which it was decided to refer the matter to Sir Arthur Stanley in his capacity as chairman of the Joint Council of the Order of St. John and the British Red Cross Society. There are two hospitals at Swindon, the Victoria and the Great Western Railway Medical Fund Society's Accident Hospital, which is almost entirely supported by workmen's subscriptions. Sir Arthur Stanley's report, which was published last week, recommends the extension of the Victoria Hospital to accommodate 200 beds, and that the Railway Medical Fund should make grants to cover the cost of treating its members. He proposes that a board of management should be formed upon which the hospital and the fund should be equally represented, with the addition of nominees of the local authorities and the G.W.R., and that the available capital resources should be pooled for building purposes.

Correspondence.

"Audi alteram partem."

AVERTIN ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—The strong commendations of avertin by Dr. James Young in your issue of May 31st (p. 1177) are most welcome and refreshing, whilst his equally strong condemnation of the usual methods of procuring anæsthesia should provoke reflection, if not discussion, and stimulate the search for new anæsthetic drugs. It cannot be denied that the present position is and has long been very unsatisfactory, and that anæsthetists who have tried each new drug and each new method as it has come out would receive with delight the advent of a drug which would possess all the advantages and none of the disadvantages of those in daily use. Perhaps in our endeavours to extract the best qualities and reject the worst of the common anæsthetics we have concentrated too much upon improvements in technique and not enough upon the necessity—the urgent necessity—of search for new drugs. There are, in other words, too few anæsthetics and too much apparatus. It has even been whispered, Sir, that there are too many "stunts" (if this word may appear in your columns), too little science, but this is just malicious gossip, the product of envy and uncharitableness. Whatever the truth, it would seem that little real scientific advance can be noted. Improvements in the technique of spinal analgesia, of local anæsthesia, the more frequent use of local anæsthesia combined with nitrous oxide and oxygen are all steps in the right direction, but we should not rest satisfied until a new drug or drugs have been found which will eliminate the dread and discomfort of the onset of unconsciousness, provide a safe induction, and procure adequate anæsthesia, and a recovery free from post-operative sickness and complications, whether toxic or irritant.

Avertin marks a great advance. It possesses in high degree most of these properties, and when combined with nitrous oxide and oxygen or a reduced ether anæsthesia very closely approaches the ideal. I hope sincerely that its use will increase. Its advantages are immense, and it is easy to give, easy to take. As regards the actual administration, I find that in cases of urgency the preliminary enema can be withheld; further, that I give morphine less frequently than I did, reserving its use for selected cases. Perhaps Dr. Young will find that the fall of blood pressure will be at times less pronounced if morphine is not given as a routine. Avertin by itself procures in most cases the desired deep sleep, and if the dosage has been accurately estimated (and in making this estimation the temperament and not the physique of the patient appears to be the important factor) the resulting depression of respiration never causes anxiety. It can be given more quickly than Dr. Young recommends—I find that half an hour is ample time in which to prepare the solution, supervise or at any rate initiate its injection, and have the patient ready for operation.

Due credit must be given to its distributors, Messrs. Bayer Products, Ltd., who wisely suggested to Dr. H. H. Dale that the drug should be tested by an experienced body of anæsthetists before it was placed upon the market. The control of it was therefore handed over to the Joint Committee of the Medical Research Council and the Section of Anæsthetics who issued it to authorised workers, including Mr. F. J. Morrin, of Dublin, on the condition that they reported their results to the Committee.

I am, Sir, yours faithfully,

York-terrace, N.W., May 31st. FRANCIS E. SHIPWAY.

To the Editor of THE LANCET.

SIR,—I have read Dr. Young's article with much interest and am glad to find another disciple of avertin. He mentions in his paper Morrin, of Dublin, Blomfield and Shipway, of London, as the introducers of this drug. He omits to mention the Municipal General Hospital at Bradford, which I think I am right in stating was one of the pioneers. This drug was seen in Berlin in 1927 by one of our staff who moved heaven and earth to get it. We were one of the first to receive it and to try it out. One of us saw it used by Prof. Katzenstein in his private clinic, and immediately saw its good properties. It has been used in this institution from its inception combined with only light ether application, also with regional anæsthesia, and is still being used to-day. It has been employed in several hundreds of cases and its remarkable contrast to chloroform and ether narcosis with their invidious leavings have rendered its use a routine procedure at this hospital for the past two years. I hope this hospital may be claimed a pioneer in this respect. Perhaps as a provincial hospital we have been overlooked, but we should give credit where credit is due.

I am, Sir, yours faithfully,

BASIL HUGHES, D.S.O., F.R.C.S.

Bradford, May 31st, 1930.

THE CAUSATION OF ECLAMPSIA.

To the Editor of THE LANCET.

SIR,—May I reply to the three points raised by Mr. Paramore on p. 1209 of your last issue? "Eclampsia," he says, "either is due to toxins absorbed from the gut—or it is not." It is my belief that the symptoms of the syndrome of eclampsia are usually expressions of disturbed physiological functions resulting from a damaged liver. At the outset of the disease there is no excess of toxins in the general circulation. Once the liver is unable to carry out its detoxicating functions, toxins absorbed from the gut will be carried in the blood stream to poison the tissues of the body—the kidneys as well as the heart. I stated some of the reasons why I believe that "it is abundantly clear that the kidneys are not concerned in the ætiology of eclampsia." I do not believe that there is any excess of toxins or poisons in the maternal blood for the kidneys to excrete—until the liver fails. The third question, as to whether the failure of the liver is due to overwork, I will answer in the negative. I believe it fails because the fœtus requires 8 g. of calcium, and relatively large supplies of sugar, iron, and iodine during the last four weeks of pregnancy. Prof. J. Russell Greig, of Edinburgh, has been kind enough to send me reprints of papers he has published this year in the *Veterinary Record* and elsewhere, showing that milk fever in cattle, so like eclampsia in many ways, is associated with a hypocalcæmia, and may be cured by intravenous injections of calcium gluconate. Injection of saline or air into the udder raises the blood calcium.

Mr. Paramore says I have burned my boats, but I have not done so without building a bridge. There is less room in the abdominal cavity of a primipara than of a multipara, and the intestines are more awkwardly displaced, so that the weight of the uterus is more likely to press on certain parts of them. I added two other reasons why primiparæ suffered more frequently from eclampsia—the fixing of the fœtal head at the thirty-sixth week, and last but not least the psychological traumata and anxieties associated with marriage, pregnancy, and the fear of labour. I ought to have said that my observations on the pressure in the abdomen were made with the woman flat on her back and under an anæsthetic.

I was much interested to read of Dr. Chalmers's experience with Chinese women, and am glad that he emphasised the fact that they have such unhealthy gastro-intestinal tracts. I think that sunlight is a profoundly important factor in preventing the toxæmias, and in this country it is essential, especially in Glasgow and manufacturing areas, to provide the women with vitamins by mouth. The parathyroids

are most important, but I am not aware that they have been shown to be seriously altered during pregnancy, as they control the calcium, while the thyroids are important as they apparently exercise some control on the glycogenetic functions of the body.

I am, Sir, yours faithfully,

G. W. THEOBALD.

Devonshire-street, W., June 2nd, 1930.

THE MECHANISM OF PULMONARY COLLAPSE.

To the Editor of THE LANCET.

SIR,—Dr. Watson-Williams invites readers to relate their experiences of the behaviour of the lung when laid bare by wound of the chest wall. Most anæsthetists must, I think, have often been surprised in operations involving exposure of lung that this structure showed so little tendency to collapse. A remarkable illustration of an exposed lung retaining its shape and size occurred in a soldier who, in 1917, was admitted to No. 56 General Hospital, France. This patient had received a gunshot wound of the left chest with so much destruction of chest wall that the lung and heart were freely exposed, the interesting point being the apparently expansive movement in the lung during inspiration. The patient eventually recovered.

I am, Sir, yours faithfully,

Clifton, June 2nd, 1930. ARTHUR L. FLEMMING.

AREA OF PRIMARY INVOLVEMENT IN PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—It used to be, and may still be, taught that pulmonary tuberculosis usually commences at the left apex. I have long been doubtful whether this was a misleading statement, as from my experience of tuberculous cases I thought the chances were about equal which side was involved first. In order to satisfy myself on the point I took the first hundred unilateral cases admitted to this hospital last year, and found that 53 were right-sided cases and 47 left-sided. One of the right cases and five of the left cases had the lower lobe only involved. It would be interesting to know if these results bear out the experience of other workers.

I am, Sir, yours faithfully,

C. DENYS HANAN, M.D. Dub.,
Res. M.O. The Royal National Hospital for Consumption for Ireland.

Newcastle, Co. Wicklow, I.F.S., May 30th, 1930.

DUDLEY GUEST HOSPITAL.—Last year this hospital established an orthopædic and fracture department, and is dealing with 60 cases weekly. There were 2552 in-patients, an increase of 20 per cent. Radium to a value of between £2000 and £2500 has been acquired, and extensions of the building are overdue.

QUEEN'S NURSES AND CONTRIBUTORY SCHEMES.—At a meeting of county nursing associations last week it was agreed that every effort should be made to secure coöperation between hospital contributory schemes and the district nursing associations. It was considered that the most satisfactory arrangement was that made by the West Sussex Associated Hospital Contributory Fund whereby 1*d.* from the weekly contribution of 4*d.* is paid to the district nursing association.

STAR AND GARTER HOME.—The report for 1929 shows that there was a falling off in the ordinary income; investments produced a smaller amount, and the donations were only £423. The expenditure increased by £1671, mainly because in 1928 the Sandgate Home lacked its full complement of patients. Contributions from the Ministry of Pensions are continually diminishing. The ability of the governors to continue the future working of the homes with the same efficiency as in the past is jeopardised for these reasons and because of the probable decrease in the interest and earning power of the investments.

Parliamentary Intelligence.

HOUSE OF LORDS.

MENTAL TREATMENT BILL.

THURSDAY, MAY 29TH.

The House considered the Commons Amendments to the Mental Treatment Bill.

Earl RUSSELL (Under Secretary for India) said that although the list of amendments was rather long, by far the larger number were drafting amendments.

"Incapable of Volition."

Viscount BRENTFORD said that his view in regard to many details of the Bill was still as strong as it was when the measure was last before their lordships. It was the first time, he thought, that voluntary patients had been allowed to place themselves in what was called a lunatic asylum, and without any certification or any reception order. They could be placed there by their relations, again without any certificate, and when a man had been sufficiently lacking in volition to place himself as a voluntary patient he could be detained without being certified by any judicial body. He could even, if he recovered his sanity, or if he became capable of volition, still be kept for 28 days, although *ex hypothesi* he was again quite sane, and he could also, by order of the representatives of the Board of Control, be kept without any judicial decision for six months. That was a provision of the Bill to which he took the very gravest exception. In his view a certificate with a judicial authority was the greatest safeguard for the liberty of the subject. However, he realised that their lordships and the majority in the Commons had taken the view that his (Lord Brentford's) opinion was wrong. He had no wish to play the part of Athanasius *contra mundum*. But Athanasius might have been right, and the world might have been wrong, and the world might subsequently, when the Bill came to be reconsidered by another Royal Commission on the Lunacy Laws, think that the present Bill had gone too far. But with this restatement of his own views on the subject he did not propose to offer any further opposition to the Bill.

Protection against Vexatious Actions.

On Clause 16 Earl RUSSELL referred to the amendment inserted in the Commons for the purpose of giving protection to the medical profession against vexatious actions. The amendment, he said, did to some extent strengthen the clause, and he therefore recommended their lordships to agree with it.

Viscount BRENTFORD said that this amendment was an extension of the clause as originally drafted, and he thought that it did not apply only to the medical profession, but to any one who had taken part in putting a man into what was now called a home. It made it impossible for any man who had been put in an asylum wrongfully by his family, or by a medical man signing a reception order, to get any redress without first going to the High Court and establishing that he had a prima facie case. That was a very unusual procedure to take. The responsibility must be on the Government for carrying the clause in this form.

Lord DANESFORT asked if there was any precedent in a case of this sort for procedure of this kind?

Lord DARLING said that there was already on the Statute Book such a provision, and the courts had acted on it frequently. There were people who apparently had an *idée fixe* and who were a positive nuisance.

The Earl of HALSBURY said that Lord Darling apparently assumed that a person who had been wrongfully shut up in an asylum had an *idée fixe*. The whole basis of the action was that he had not got an *idée fixe*, and he (Lord Halsbury) failed to see that that had anything to do with the matter raised by Lord Danesfort.

Earl RUSSELL said that he did not propose to follow noble and learned lords into legal subtleties, but it was felt that more protection should be given to the medical profession. He thought that one might safely say that nobody with a genuine case would be stopped by this provision from starting his case. It was only a person who imagined that he had a case and, in fact, had none, who would be stopped from giving all this trouble and causing all this expense.

The amendment was agreed to.

Accounts of Licensed Houses.

On Clause 17 Earl RUSSELL moved that the House agree with an amendment inserted by the Commons providing

that the accounts of licensed houses should be kept as the Board of Control prescribed, and should be audited once a year by direction of the Board.

The Earl of HALSBURY moved the rejection of the amendment. He said that he could understand that licensed houses should have every proper supervision to prevent abuse and so on, but they were private ventures, and he failed to see what excuse there was for saying that the accounts of a private venture should be gone into. The matter was even worse than that, because the whole or any part of the accounts could be published, and the publication of part of a document might be very misleading. Any comment could be made on a part of the audit which the Board of Control might choose to publish. The clause went too far, and he hoped that it would be left out of the Bill.

Earl RUSSELL said that no concern which was officially allowed to have the charge of a certified lunatic could possibly be regarded as a private concern. It was clearly one in which the public had a direct and over-riding interest.

The Earl of HALSBURY said that he meant that a licensed house was a purely private concern as far as regarded its financial running, and this clause dealt with the financial running and nothing else.

Earl RUSSELL said that that was a matter in which the public were profoundly interested, and it was, above all, a case in which duty might very easily conflict with interest. Their lordships would recall that the Royal Commission were divided half and half as to the retention of licensed houses. The Government did not desire to deal with licensed houses in this Bill, but this amendment was put in by the Commons on the advice of friends of Lord Halsbury, and the Minister of Health somewhat reluctantly accepted it. Although the Royal Commission were divided as to the retention of licensed houses they were agreed that if they were retained it was proper that a power of this character should exist.

Viscount BRENTFORD asked what advantage could it be to the administration of the Lunacy Law to publish private accounts of the running of an institution which was carried on under supervision in regard to certain respects, but which merely took in private persons whose friends paid what they regarded as a reasonable fee for such accommodation?

Earl RUSSELL said that he did not think that this was a matter so much of the fees charged to the patient. Those fees were a matter of bargain between the friends of the patient and the keeper of the licensed house. The latter might charge whatever he was able to get, and there was nothing improper in that. But the sort of question which came before the Royal Commission, and which they thought was very undesirable, was a case where the superintendent of a very important house of this character was paid partly by commission on the profits. Then there were cases in which articles had been supplied to patients while there, and prices had been charged sometimes considerably in excess of their cost to the institution. There were two possible views about that. One view was that the keeper of the institution was a hotel keeper and was entitled to charge his guests anything he could make out of them. He thought their lordships would agree that the better view was that the keeper of the licensed house was not entitled to charge his patients more than the cost price, plus something, perhaps, for establishment or overhead charges, and that in any case the prices charged, if more than the sums actually paid, ought to be disclosed to the persons paying the accounts. The case which was gone into as a matter of fact by a special audit by the Royal Commission was rather a bad case and raised some apprehension in their minds. He was sure that their lordships would not conceive that any portion of these accounts was likely to be published unless there was something that amounted to a perfectly definite public scandal which ought to be shown up and held up to public odium and execration.

Lord CARSON said that this amendment was really one more of those persistent attempts to get everyone under the control of Government Departments, which were found in every Bill which came before Parliament. Many people selected these mental homes because they were known to be conducted by kindly people who looked well after the patients and made a reputation for themselves. If there was a scandal, or anything like a scandal, the thing to do was to withdraw the licence. For heaven's sake do not let them on such pretexts put an end to these private homes, which from his experience of various cases which had been brought before the courts he thought were of great service. Do not let them say that everybody must be put under the Board of Control. If this amendment was left in the Bill these private homes had better be shut up altogether.

The motion to agree with the Commons amendments was rejected by 31 votes to 17.

HOUSE OF COMMONS.

THURSDAY, MAY 29TH.

Exhibition of Vivisection Film.

Mr. FREEMAN asked the Home Secretary whether his attention had been called to a film shown publicly at the Professional Nursing, Midwifery, and Public Health Exhibition, Horticultural Hall, Westminster, on March 6th, 1930, illustrating vivisection experiments on certain animals, including a dog, performed by Dr. H. H. Dale; and, in view of the provisions of the Cruelty to Animals Act—viz., that an experiment must be performed with a view to the advancement of new discovery of physiological knowledge or of knowledge which would be useful for saving or prolonging life or alleviating suffering, what action he proposed to take in the matter.—Mr. CLYNES replied: If the hon. Member will refer to section 3 of the Act, he will see that the words which he quotes are qualified by a proviso which expressly lays down that experiments may be made for the purpose of illustrating lectures in medical schools, hospitals, colleges, or elsewhere, with a view to instruction in physiological knowledge or knowledge which will be useful in saving life or alleviating suffering, on the appropriate certificate (C) being given by the scientific authorities mentioned in the Act. The experiments referred to in the question were performed under the authority of such a certificate, and no action on my part is necessary or possible.

Mr. FREEMAN: Does the right hon. gentleman consider that a film of this character exhibited to the public, and not to students only, comes under the category?

Mr. CLYNES: I have referred to the terms of the Act. The proviso in question is highly technical and scientific, and if my hon. friend wishes to press any other point, I should require notice of it.

Lieut.-Commander KENWORTHY: Would my right hon. friend consider some action in the case of this film, since the very fact of it being shown must be painful to many animal lovers?

Mr. R. S. YOUNG: Has the film been passed by or submitted to the London County Council?

Mr. CLYNES: I am afraid that I personally, as representing the Home Office, have no control over the exhibition of films for scientific purposes.

Psychotherapeutic Treatment.

Mr. MANDER asked the Home Secretary whether, in the event of persons being referred by the Juvenile Courts for psychotherapeutic treatment, any contribution was made from public funds towards the cost.—Mr. CLYNES replied: If the hon. Member has in mind treatment as distinct from observation and examination, the answer is in the negative.

Mr. MANDER: Does the Home Office possess any power under any Act to grant such maintenance or assistance?

Mr. CLYNES: Not as far as I know.

Treatment of Juvenile Offenders.

Mr. CADOGAN asked the Home Secretary whether it was still his intention to introduce legislation to amend the Children Act of 1908, incorporating the recommendations of the departmental committee on the treatment of young offenders; and when such legislation would be introduced.—Mr. CLYNES replied: Yes, Sir. I hope it may be possible to introduce a Bill in the autumn, but the hon. Member will not expect me to make a definite promise.

Ptomaine and Food Poisoning.

Sir WALTER PRESTON asked the Minister of Health if he would allow the Ministry's officials during the coming summer to watch carefully cases of ptomaine and food poisoning and, if they found them seriously on the increase, to inquire whether such were due to the absence of preservatives in food which was now enforced.—Miss S. LAWRENCE, Parliamentary Secretary to the Ministry of Health, replied: It has been the practice of my Department for some years past to inquire into the causes of all food poisoning outbreaks of special interest, and this practice will be continued. Since the Preservatives Regulations came into operation, no cases have been reported in which the outbreak could be attributed to the prohibition of the use of preservatives, and my right hon. friend is advised that boric acid as formerly used for preservative purposes is ineffective in preventing the development of food poisoning organisms.

Sir WALTER PRESTON: Will the hon. lady inquire of the medical profession whether there is not a large increase of these cases of ptomaine poisoning?

Miss LAWRENCE: I have no reason to believe that is so, but I will look into the matter and communicate with the hon. Member.

Health Insurance Benefits.

Sir KINGSLEY WOOD asked the Minister of Health the amount of additional sickness, disablement, and maternity

benefits paid, respectively, during the last six months above the normal rate to members of the Navy, Army, and Air Force Insurance Fund who had continued their membership after discharge from His Majesty's Forces; also the value of the payments made for such period in respect of dental treatment, the provision of artificial teeth, ophthalmic treatment, the provision of spectacles, and the provision of medical and surgical appliances.—Miss LAWRENCE replied: The following is the information asked for:—The amounts of additional cash benefits paid to readmitted members of the Navy, Army, and Air Force Insurance Fund during the six months ended 31st March, 1930 (the last date up to which accounts have been made up), were as follows: Sickness benefit, £2562 10*s.* 4*d.*; disablement benefit, £4359 0*s.* 10*d.*; and maternity benefit, £225. The amounts paid for additional treatment benefits during the same period were: Dental benefit (including dentures), £6018 0*s.* 6*d.*; ophthalmic benefit (including spectacles), £471 11*s.* 9*d.*; and medical and surgical appliances, £162 17*s.* 2*d.*

Dangers of Machine-skimmed Condensed Milk.

Sir CHARLES CAYZER asked the Minister of Health whether, in view of the recent death of a child at Grimsby as a result of eating food made from imported machine-skimmed condensed milk, he would consider banning the import of such milk in the interests of public health.

Lieut.-Colonel HENEAGE asked the Minister of Health if his attention had been called to cases of illness and death of children caused by skimmed milk or tinned milk imported from foreign countries; and if he would consider prohibiting the importation of such milk.—Miss LAWRENCE replied: My right hon. friend has made inquiries into the case to which he assumes Sir C. Cayzer refers. He is not aware of any similar case. In that case the medical witness at the inquest stated that the child, who had not received medical attention, died from gastroenteritis which might have been set up by dirty food conditions. It was also stated that, though the child appeared to be well nourished, his diet was injudicious, and had included a meal of corned beef and suet pudding. The machine-skimmed milk was not made up as a drink, but had been used for making milk puddings. My right hon. friend sees no reason from a consideration of the circumstances of this case for prohibiting the importation of condensed machine-skimmed milk.

Smoke Abatement By-laws.

Captain PETER MACDONALD asked the Minister of Health in how many cases local authorities had made by-laws under the Smoke Abatement Act, 1926; and whether he had in any case exercised his compulsory powers respecting the making of by-laws.—Miss LAWRENCE replied: By-laws under section 2 of the Act of 1926 have been made by 112 local authorities. My right hon. friend has not thought it necessary in any case to exercise the power of requiring these by-laws to be made.

Milk Production.

Mr. GOULD asked the Minister of Agriculture if he could give any estimate of the production of milk in this country for 1930, and the figures for 1928 and 1929.—Dr. ADDISON replied: An annual estimate of the total milk production (excluding milk fed to stock) in England and Wales is made on the basis of the yield per head of the dairy herd as ascertained in the census year June, 1924–May, 1925. On this basis the total production for the period June, 1926–May, 1927, was 1152 million gallons; for 1927–28, 1147 million gallons; and for 1928–29, 1131 million gallons.

Misuse of Maternity Benefit.

Mr. RAMSBOTHAM asked the Minister of Health whether he was aware that the maternity benefit was sometimes used, not for the benefit of the mother, but for other family purposes; and whether his department had taken any steps to ensure the proper application of this allowance.—Mr. GREENWOOD replied: It is laid down in the National Health Insurance Act that maternity benefit shall in every case be the mother's benefit, and must in all cases be paid to her. Under the present arrangements for the administration of the benefit, the amount once paid over to the mother is at her disposal, and so far as I am aware it is almost invariably used in meeting the various expenses consequent upon her confinement. So long as this method of administering the benefit is continued I do not see what steps my Department could take to control the method of application of the money by the mother.

Indian Medical Service Pensions.

Replying to Major Graham Pole, Mr. WEDGWOOD BENN (Secretary of State for India) stated that the number of officers of the Indian Medical Service who drew pensions through the India Office chargeable to Indian Revenues during the year ended March 31st, 1930, was 569, and the amounts paid totalled £331,513.

A Schoolboy's Mental Condition.

Mr. MANDER asked the Home Secretary if his attention had been called to the case of George Collier, aged 15, who was certified insane after two attempts at murder and an attempt at suicide at the Philanthropical Society's school at Redhill, where he was sent for another assault occasioning bodily harm; what measures were taken to ascertain Collier's mental condition before going to Redhill; and what action he proposed to take to prevent such an occurrence in future.—Mr. CLYNES replied: Yes, Sir. Before the lad was sent to the school he was carefully examined by a prison medical officer with special reference to his mental condition, but at that time there were no indications of the insanity which unhappily manifested itself after his arrival at the school. I am satisfied that every possible care was taken and that the exceptional circumstances of this case do not call for any general action.

MONDAY, JUNE 2ND.

International Conference on Narcotics.

Lieut.-Colonel FREMANTLE asked the Home Secretary if he was taking steps to summon a preliminary conference of countries manufacturing narcotics with a view to limitation of their output, as suggested on behalf of Great Britain at Geneva on May 14th last; and if the Soviet Republic would be invited to participate in any such conference.—Mr. SHORT (Under Secretary to the Home Office) replied: My right hon. friend is afraid he is not in a position to make any statement on the subject at the present time.

Milk Rations for School-children.

Mr. FREEMAN asked the President of the Board of Education what steps he was taking to secure that every scholar had a daily ration of milk during school hours where desired.—Mr. MORGAN JONES (Parliamentary Secretary to the Board of Education) replied: This is primarily a matter for the local education authorities; but my right hon. friend is coöperating with the National Milk Publicity Council in their endeavours to secure that arrangements for the supply of milk are made in as many schools as possible.

Government and Factory Legislation.

Viscount WOLMER asked the Prime Minister whether it was intended to introduce a Factories Bill, a Bill enforcing the Washington Eight Hours Convention, or a Bill repealing the Trade Union Act, 1927.—Mr. MACDONALD (Prime Minister) replied: As regards the Bill to amend the Trade Disputes and Trade Unions Act, 1927, I have nothing to add to the replies already given on this subject. The Hours of Industrial Employment Bill has already been introduced, but, as I stated on the 27th May, it is not at present possible to say when the further stages will be taken. The question of the date of introduction of the Factories Bill is still under consideration.

Discharge of a Hospital Orderly.

Mr. W. G. HALL asked the Minister of Pensions, if, in view of the circumstances under which Mr. W. E. Fox was recently discharged from the staff of the Ministry of Pensions Hospital, Cosham, Portsmouth, he would have inquiry made into this case with a view to some compensation being granted.—Mr. F. O. ROBERTS replied: The services of this orderly were dispensed with because by his own acts he had brought about a state of affairs in which his retention would have been prejudicial to the patients in the Cosham Hospital. He was given a fortnight's notice of the termination of his appointment, a longer period than that required by the conditions of his employment, and no claim to compensation arises.

TUESDAY, JUNE 3RD.

Health Insurance Appeals.

Mr. RHYS DAVIES asked the Minister of Health if he would issue a table showing the number of appeals made to his department by insured persons against the refusal of societies to meet their claims for sickness or disablement benefit, giving the figures of the number of appeals allowed and disallowed for each of the last three years.—Mr. GREENWOOD replied: The number of appeals made under Section 90 of the National Health Insurance Act, 1924, to the Minister by insured persons in respect of claims for sickness and disablement benefit, and the number of such appeals which have been allowed and disallowed during the last three years, are given in the following table:—

	1927–1928.	1928–1929.	1929–1930.
Total number of such appeals ..	55	57	78
Number allowed	20	25	28
Number disallowed	35	32	50

An Official Notice to Doctors.

Lieut.-Colonel HENEAGE asked the Chancellor of the Exchequer whether he was aware that notice No. 37, Sec. 41,831/1929 was sent out by the Commissioners of

Customs and Excise registered to doctors; how many were sent out, and at what cost for registration alone; and what was the object of registering this leaflet.—Mr. SNOWDEN (Chancellor of the Exchequer) replied: The Commissioners were advised that it was desirable to ensure that the contents of the notice, to which the hon. and gallant Member refers, were effectively brought to the knowledge of the persons concerned, and they were therefore either delivered personally, where this was practicable, or were sent by registered post. Particulars of the numbers delivered by post and, in consequence, the cost of registration, cannot be ascertained without undue labour.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointment has been made: Surg. Lt. T. L. Cleave to *Beaufort*.

ROYAL NAVAL VOLUNTEER RESERVE.

Proby. Surg. Lt. (D) J. E. Daniels to be Surg. Lt. (D).

ROYAL ARMY MEDICAL CORPS.

Capt. D. Crellin, *M.C.*, to be Maj.
Lt. J. W. Eames to be Capt.

ARMY DENTAL CORPS.

Capt. T. Edwards to be Maj.

ARMY RESERVE OF OFFICERS.

Lt.-Cols. F. J. Palmer, J. Tobin, and H. A. Davidson, having attained the age limit of liability to recall, cease to belong to the Res. of Off.

Lt. G. R. A. de M. Rudolf to be Capt.

TERRITORIAL ARMY.

Capt. D. Lamont to comd. 5th (Scottish) Hygiene Co., vice Capt. J. A. Bingham, vacated.

To be Lts.: A. Glen (late R.G.A., Spec. Res.), P. Malpas (late Offr. Cadet, Liverpool Univ. Contgt., Sen. Div., O.T.C.), W. H. Dowell (late Cadet, Oundle Sch. Contgt., Jun. Div., O.T.C.), and H. W. Bambridge.

TERRITORIAL ARMY RESERVE OF OFFICERS.

Lt. R. N. Kinnison, from Active List, to be Lt.

INDIAN MEDICAL SERVICE.

Lt.-Col. G. C. L. Kerans to be Col.

Lt.-Col. J. Husband to be Col.

The undermentioned officers retire: Lt.-Cols. C. H. Fielding and C. B. McConaghy.

The following command changes of R.A.M.C. officers in India are notified: Lt.-Col. P. J. Hanafin to the British Military Hospital at Bangalore; Maj. F. S. Gillespie to the British Military Hospital at Madras (temporary), relieved by Lt.-Col. C. J. Wyatt; Col. J. C. Kennedy, officiating D.D.M.S., Southern Command; Lt.-Cols. C. White, officiating commandant of the Colaba Hospital; and E. A. P. Brock to the Poona Hospital; Majs. H. P. Rudolf, specialist, Madras District; A. D. Fraser, to the British Military Hospital at Kamptee; and R. W. D. Leslie to the British Military Hospital at Pachmarhi.

HONORARY SURGEONS TO THE KING.

Maj.-Gen. H. Ensor, C.B., C.M.G., C.B.E., D.S.O., late R.A.M.C., vice Maj.-Gen. R. S. Hannay, C.B., C.M.G., D.S.O. (ret.), and Lt.-Col. (temp. Col.) G. de la Cour, O.B.E., R.A.M.C., promoted Bt.-Col., vice Maj.-Gen. J. S. Gallie, C.B., C.M.G., D.S.O. (ret.), have been appointed Honorary Surgeons to the King.

MANFIELD HOSPITAL CONVALESCENT HOME.—Mrs. Shipman has given her residence, Templemore, and the two acres in which it stands, as a convalescent home for Manfield Orthopædic Hospital, Northampton.

A PLAGUE OF ANTS.—The Queen Victoria Hospital, Morecambe, is said to be suffering from a plague of ants which crawl about the floors and infest the patients' lockers. Some of the flooring is being taken up in the hope of tracing the trouble to its source, "and the advice of an insectologist is being sought." There was similar trouble about this time last year, and it was hoped that a recurrence of the visitation had been prevented.

Medical News.

UNIVERSITY OF CAMBRIDGE.—On May 31st the following degrees were conferred:—

M.D.—L. S. Fry, L. P. L. Firman-Edwards, Reginald Hilton, J. V. Fiddian, and B. E. Schlesinger.

M.B. & *B.Chir.*—Charles Hill, G. E. Parker, and J. E. Semple.

M.B.—J. C. C. Poole.

UNIVERSITY OF LONDON.—The Senate invite applications for the Graham Scholarship in Pathology (£300 per annum for two or more years, tenable at University College Hospital) and for the Laura de Saliceto Studentship for Cancer Research. Particulars will be found in our advertisement columns.

AUSTRALIAN AND NEW ZEALAND MEDICAL ASSOCIATION IN ENGLAND.—The summer dinner of this association will be held at the Trocadero Restaurant, Piccadilly, on Friday, June 13th, at 7.45 for 8 P.M. Mr. T. P. Dunhill will preside and Sir Neville Howse, V.C., will be present as the official guest of the association. All medical visitors from Australia and New Zealand, whether members of the association or not, are invited to attend. The hon. secretary's address is 26, Queen Anne-street, London, W. 1.

MEDICAL SOCIETY OF LONDON.—The officers of this society elected for the forthcoming session are as follows: President: Dr. R. A. Young. Vice-Presidents: Dr. F. J. Poynton, Mr. Herbert Tilley, Mr. V. Zachary Cope, and Dr. J. Seymour Maynard. Hon. treasurer: Mr. H. W. Carson. Hon. librarian: Dr. A. F. Voelcker. Hon. editor: Mr. T. P. Legg. Hon. secretaries: Dr. A. Hope Gosse, Mr. W. E. Tanner, and (for foreign correspondence) Dr. Herbert Spencer. Council: Mr. Donald Armour, Mr. Carter Braine, Mr. W. R. Bristow, Dr. Walter Carr, Mr. R. Davies-Colley, Mr. Tudor Edwards, Dr. Anthony Feiling, Mr. Eric Pearce-Gould, Dr. F. E. Larkins, Dr. J. D. P. McLatchie, Mr. L. E. C. Norbury, Dr. B. T. Parsons-Smith, Mr. J. E. H. Roberts, Mr. F. H. Robbins, Dr. B. E. Schlesinger, Sir John Thomson-Walker, Dr. Lennox Wainwright, Mr. C. P. G. Wakeley, Dr. F. M. R. Walshe, and Mr. F. A. Williamson-Noble.

MENTAL AFTER-CARE ASSOCIATION.—Prince George presided at the jubilee meeting of this association on June 2nd, and stated that nearly 19,000 patients had been helped since the work began in 1879. Only lack of funds prevented the further expansion which was desirable. Sir Maurice Craig said that ex-patients found in the association a group of people who were willing to help not only with money but with understanding. Valuable work was also done in preventing first breakdowns, and cases of this kind were often sent from general hospitals and elsewhere. Mr. L. G. Brock, chairman of the Board of Control, said it was because the association provided the right kind of help that it was one of the few organisations to which his department was able to subscribe. He hoped that local authorities would support such work financially.

ROYAL VISITS TO HOSPITALS.—On Thursday last week Princess Beatrice laid the foundation-stone of the new Kensington, Fulham, and Chelsea General Hospital in Richmond-road, Earl's Court, which, when completed, will contain 112 beds. At first two-thirds only of the scheme will be carried out, with 76 beds and an out-patients' department. The cost of this will be about £70,000, of which over £30,000 has been raised. A promise of £10,000 has been made anonymously on condition that five beds are endowed at a cost of £1000 each.—On the same day Prince and Princess Arthur of Connaught were present at the "house warming" given by the lady superintendent and the nursing staff of the Middlesex Hospital to view the new nurses' home in Foley-street. The first section of the building is already occupied, and the second is nearing completion. The building contains 225 bedrooms in four schemes of colour—blue, blue and cream, green, and orange. Among the amenities are a swimming pool, a roof lounge, badminton courts, reading room, and smoking room.—On Saturday Prince George opened the Winford Orthopædic Hospital, to which the inmates of the Orthopædic Hospital at Redland, Bristol, and the patients of the Bristol Crippled Children's Society are being removed. The building, which is the nucleus of a larger scheme providing for 160 children, will accommodate 60 patients. It consists of an administrative block, a treatment block, a large open pavilion divided into two wards with a broad concrete terrace in front; in the treatment block there are an operating theatre, an X ray room, and the necessary appurtenant buildings. The hospital has been erected at a cost of £62,000 on a spur of the Mendip Hills.

UNIVERSITY OF EDINBURGH.—Sir James Barrie, O.M., has been elected Chancellor of the University in succession to the late Lord Balfour.

PADDINGTON MEDICAL SOCIETY.—The inaugural meeting of this society will be held at 9 P.M. on Tuesday, June 10th, at the Paddington Town Hall. The acting hon. secretary is Dr. J. Cohen, 23, Westbourne Park-road, London, W. 2.

INFANTS HOSPITAL.—Over £100,000 has now been subscribed towards the extension of this hospital in Vincent-square, Westminster. Last year the hospital's convalescent home at Burnham received 119 patients, who stayed an average of 50 days.

LONDON SMALL-POX HOSPITALS.—The Public Health Committee of the London County Council has agreed to continue until the end of the year the agreements made by the Metropolitan Asylums Board with certain extra-metropolitan authorities for the reception of cases of small-pox occurring in their districts into the Board's small-pox hospitals. The agreement with the Middlesex County Council is to be reviewed in November next.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.—The sixteenth annual conference of this association will be held from July 3rd to 5th at the British Medical Association's house in Tavistock-square, London, W.C. It will be opened on July 3rd by Mr. Arthur Greenwood, Minister of Health, and Sir George Newman and Dr. J. Parlane Kinloch will introduce a discussion on the effects on the Tuberculosis Campaign of the Local Government Act, 1929. On the following day Major Walter Elliot, M.P., will open the conference and the discussion will be continued.

MEMORIAL TO A MEDICAL MAN.—A fund has been raised in memory of Dr. William Andrew MacWilliam, who practised for 15 years at Norbury, and died last February. It has been decided to allocate the money as follows: £100 for a memorial shelter on Pollards Hill recreation ground, Norbury; £100 for a bed in St. Mary's Maternity Hostel, Croydon; £50 for a cot in the same institution; and the remainder (about £200) for radium for Croydon General Hospital.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION.—The annual meeting of this association will be held at 6 P.M. on Thursday, June 12th, in the Holborn Restaurant, and will be followed by an informal dinner. Sir Arthur Newsholme will preside and Prof. Major Greenwood, F.R.S., will introduce the subject of post-graduate education for the local government medical service. Poor-law or local government medical officers are invited to attend, and further particulars may be had from the hon. treasurer, Mr. F. Greenwood, Bank Chambers, High-street, Stoke Newington, N. 16.

ELDERLY NURSES' PERMANENT HOME FUND.—A scheme has been prepared with the object of providing a home for elderly nurses who are no longer able to earn a living by the practice of their profession. The site chosen for the home is Bournemouth, whose mayor and mayoress are supporting the movement, but the home is not to be confined only to those who have worked or lived in the town. Contributions should be sent to the Hon. Treasurer of the Fund, Mr. F. Cobley, Westminster Bank, Southbourne, Bournemouth.

AN ABERDEENSHIRE COTTAGE HOSPITAL.—Colonel Farquharson, of Invercauld, Provincial Grand Master of Aberdeenshire, recently laid, with masonic honours, the foundation-stone of the Nicoll Hospital in the village of Rhynie, in north-western Aberdeenshire. The late Dr. P. J. S. Nicoll, a native of the parish, who practised in London and died in 1926, bequeathed £5000 towards its erection, a sum subsequently augmented by the gift of £3000 from his friend, Mr. Theodore Godlee. The hospital contains six beds.

MEDICAL GOLFING SOCIETY.—The annual summer meeting was held at Walton Heath on May 29th. Over 100 members competed, and enjoyed the hospitality of Lord Riddell. The various competitions resulted as follows: THE LANCET Challenge Cup: W. Rowley Bristow, after a tie with C. Max Page, at 1 down. Milsom Rees Challenge Cup: M. G. Mayou, after a tie with J. W. Harrison, at 5 down. Henry Morris Challenge Cup: A. Don, 3 up. Veterans' Cup: A. Don, 3 up; George Dawson, 2 up. Handicap prizes.—Class 1: C. Max Page, after a tie with W. Rowley Bristow, at 2 up. Best last 9: H. C. Apperley, 1 up. Class 2: (1st) A. Don, 3 up; (2nd) George Dawson, 2 up. Best last 9: J. W. Harrison, 3 up. Foursomes: (1st) T. J. Kelleher and J. Grace; (2nd) Lindsay Rea and W. McCullagh.

STRANGEWAYS RESEARCH LABORATORY, CAMBRIDGE.—A course of instruction in the technique of tissue culture will be given at this laboratory from July 1st to 29th. Only a limited number of applicants can be received, and those wishing to take the course should communicate with Dr. H. B. Fell at the laboratory.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—The College is to be closed on Saturday, June 7th, and Monday, the 9th.

CONFERENCE ON CREMATION.—The ninth annual conference of the Federation of Cremation Authorities will be held at Edinburgh and Glasgow from July 4th to 8th. The federation's address is 37, York-street, Manchester.

A LONG WAITING LIST.—The Cumberland Infirmary's waiting list now exceeds 700, and the public assistance committee is being urged to prepare its scheme under the Local Government Act as speedily as possible.

VENTNOR CONSUMPTION HOSPITAL.—Of the 168 beds at the Royal National Hospital for Consumption, at Ventnor, 165 were, on the average, in constant occupation last year. The annual report states that in nearly every case in which early treatment had been sought there was an improvement.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
FRIDAY, June 13th.—5 P.M., OPHTHALMOLOGY. Election of Officers and Council. Paper: Mr. Tudor Thomas: An Experiment in Keratoplasty.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.
THURSDAY, June 12th.—5 P.M., Sir Charles Martin: The Thermal Adjustment of Man to External Conditions, more particularly those pertaining to Warm Climates. (First Croonian Lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, June 9th, to SATURDAY, June 14th, MEDICAL SOCIETY OF LONDON, 11 Chandos-street, Cavendish-square, W. Special M.R.C.P. lectures at 8.30 P.M. Tues., Dr. H. Gardiner-Hill: Recent Work on the Ductless Glands. Fri., Prof. Hugh McLean: Recent Research on Gastric Physiology and Pathology and its Bearing on Treatment. Further particulars from the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
WEDNESDAY, June 11th.—2.30 to 5 P.M.: Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M.: Dental Clinics. 2.30 to 5 P.M.: Medical, Surgical, Throat, and Ear Clinics. Operations.
FRIDAY.—10.30 A.M.: Ear, Nose, and Throat Clinics. 2.30 to 5 P.M., Medical, Surgical, and Children's Diseases Clinics. Operations.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
TUESDAY, June 10th.—10 A.M., Medical Registrar: Medical Wards. 2 P.M., Mr. Hamblen Thomas: Throat, Nose, and Ear Dept. 3 P.M., Sir Henry Simson: Gynæcological Ward.
WEDNESDAY.—10 A.M., Dr. Burnford: Medical Wards. 2 P.M., Mr. Simmonds: Surgical Wards. Dr. Scott Pinchin: Medical Out-patients.
THURSDAY.—10 A.M. to 1 P.M., Neurological Department. Demonstration of Fractures. 2 P.M., Medical, Surgical, Eye and Genito-Urinary Departments.
FRIDAY.—10 A.M., Dr. Pritchard: Medical Wards. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Department. 2 P.M., Mr. Sinclair: Operations.
SATURDAY.—9 A.M., Mr. Vlasto: Throat, Nose, and Ear Operations. 9.30 A.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M., Dr. Owen: Medical Children's Department.
Daily, 10 A.M. to 5 P.M., Medical, Surgical, and Special Out-patients, Operations, Wards Visits, Anæsthetic Courses.

NATIONAL HOSPITAL, Queen-square, W.C.
TUESDAY, June 10th.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Martin: Cerebral Vascular Disease.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Riddoch: Neurosyphilis.
FRIDAY.—12 noon, Dr. Purdon Martin: Anatomy and Physiology of Nervous System. 2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Symonds: Minor Mental Disorders.

ST. MARY'S HOSPITAL INSTITUTE OF PATHOLOGY, W.
THURSDAY, June 12th.—5 P.M., Col. L. W. Harrison: The Development of the Modern Treatment of Syphilis.

CITY OF LONDON MATERNITY HOSPITAL, City-road, E.C.
TUESDAY, June 10th.—5 P.M., Dr. H. C. Lucey: Clinical Pathology of Pregnancy.

Appointments.

BAMBER, G. W., M.B., B.Ch. Camb., M.R.C.P. Lond., has been appointed Dermatologist to the Metropolitan Hospital, Kingsland-road, E.

PARRY, R. H., L.R.C.P. Lond., M.R.C.S., Medical Officer of Health for Bristol.

WOODD WALKER, G. B., M.B. Camb., F.R.C.S. Eng., Assistant Surgeon to the West London Hospital.

Vacancies.

For further information refer to the advertisement columns.

Albert Dock Hospital, Connaught-road, E.—Res. M.O. At rate of £110.

All Saints' Hospital, 91, Finchley-road, N.W.—H.S. At rate of £150.

Altrincham General Hospital, Cheshire.—Sen. H.S. Also Jun. H.S. At rate of £150 and £120 respectively.

Barnsley, Beckett Hospital and Dispensary.—H.P. £200.

Bath, Royal United Hospital. H.P. £120.

Birmingham General Hospital.—Two Anæsthetists. £120. Also H.P. and Two H.S.'s. Each £70.

Birmingham, Queen's Hospital.—H.P.'s, and H.S.'s to Special Depts. Each at rate of £70.

Blackburn Royal Infirmary.—Res. H.P. £175. Also 4th H.S. £150.

Bolingbroke Hospital, Wandsworth Common, S.W.—Res. M.O. £200.

Bristol, City and County of.—Chief Asst. M.O.H., &c. £800.

Bristol General Hospital.—Hon. Clinical Assistants.

Cancer Hospital, Fulham-road, S.W.—Pathologist. £850.

Cardiff, Cefn Mably Hospital, Michaelstone-y-Vedw, near Newport.—Asst. Res. M.O. £250.

Chester, East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow.—Asst. M.O. £275–£300.

Chesterfield and North Derbyshire Royal Hospital.—Cas. O. At rate of £200.

Dartford, Kent, Southern Hospital.—2nd Asst. M.O. £550.

Derby, Derbyshire Royal Infirmary.—Asst. H.S., and Cas. O. Also Ophth. H.S., and Res. Anæsthetist. Each £150.

Doncaster Royal Infirmary.—Second H.S. and Third H.S. Each at rate of £150. Also Hon. Phys. and Pathologist. £250.

Down County Regional Education Committee.—Asst. Sch. M.O. £600.

Dreadnought Hospital, Greenwich.—H.P. and H.S. At rate of £110.

Freemasons Hospital and Nursing Home, 237, Fulham-road, Chelsea, S.W.—Res. M.O. At rate of £250.

Gloucestershire Royal Infirmary and Eye Institution.—H.P. and H.S. At rate of £135 and £100 respectively.

Great Yarmouth General Hospital.—H.S. £125.

Hampstead General and North-West London Hospital, Haverstock Hill, N.W.—H.S., H.P., and Cas. Surg. O. Each at rate of £100.

Hull Royal Infirmary.—H.S. At rate of £150.

Hyde, Borough of.—M.O., &c. £800.

Indian Medical Service.—Commissions.

Ipswich, East Suffolk and Ipswich Hospital.—H.P. £120.

Lenham, Kent, County Sanatorium.—Locum Tenens. 8 gns. per week.

Liverpool, St. Paul's Eye Hospital.—H.S. At rate of £120.

L.C.C.—Assistant Organisers for Children's Care Work. 66*s.* 6*d.* weekly.

London Female Lock Hospital, 283, Harrow-road, W.—H.S. £150.

London Panel Committee, 17, Russell-square, W.C.—Organising and Asst. Med. Secy. £600.

London Skin Hospital, 40, Fitzroy-square, W.—Hon. Phys.

London University.—Graham Scholarship in Pathology. £300. Also External Examinerships.

Manchester, Ancoats Hospital.—H.S. At rate of £100. Also Clin. Asst for Ear, Nose and Throat Dept. 10*s.* 6*d.* per clinic.

Manchester Babies' Hospital, Burnage-lane, Levenshulme.—Sen. Res. M.O. At rate of £125.

Manchester Ear Hospital, Grosvenor-square, All Saints.—Non-Res. H.S. At rate of £150.

Manchester Royal Infirmary.—Surg. O. to Out-patients. £35. Also Clinical Pathologist. £156.

Manor House Hospital, Golders Green.—H.S. £200.

Margate and District New General Hospital.—Res. M.O. £125.

Middlesbrough County Borough Fever Hospital.—Asst. Res. M.O. £450.

Mitcham, Wilson Cottage Hospital.—Hon. Consulting S. and Hon. Consulting P. to Ear, Nose, and Throat Dept.

Mount Vernon Hospital, Northwood, Middlesex.—Gynæcologist.

National Hospital, Queen-square, W.C.—Jun. Reg. £200. Also Asst. Phys.

Newark General Hospital.—Res. H.S. At rate of £150.

Newcastle-upon-Tyne General Hospital.—Radiologist. £300.

Norwich, Norfolk and Norwich Hospital.—H.S. £120.

Northampton, Mental Hospital, Berrywood.—Locum Tenens M.O. 7 gns. per week.

Nottingham General Hospital.—2nd Cas. O. At rate of £150.

Oldham Royal Infirmary.—H.S. At rate of £175.

Portsmouth Royal Hospital.—Cas. O. At rate of £100.

Pretoria Onderstepoort Veterinary Research Laboratory.—Three Research Fellowships. £800–£1000.

Queen's Hospital for Children, Hackney-road, E.—Res. M.O. At rate of £200. Also Asst. Physician.

Rhondda Urban District Council.—Asst. M.O.H., &c. £500.

Rotherham Hospital.—Sen. H.S. £200. Also H.P. £180.

Royal Free Hospital, Gray's Inn-road, W.C.—Asst. M.O. for Female V.D. Clinic. At rate of £350. Clin. Assistantships to Special Depts. Also Res. Anæsthetist to the Gyn. and Obstet. Unit. £150.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Hon. Clin. Asstş.

St. Thomas's Hospital, S.E.—Physician. Physician to Out-patients' Dept. Also Asst. Dental S.

Salford Royal Hospital.—H.P., and H.S.'s. Also Cas. H.S. All at rate of £125.

Sheffield Children's Hospital.—3rd Res. M.O. £100.

Sheffield Royal Hospital.—Res. Anæsthetist. At rate of £80.

Sheffield Royal Infirmary.—H.S. £80.

South London Hospital for Women, South Side, Clapham Common, S.W.—Two H.S.'s. Each at rate of £50.

South Shields, Ingham Infirmary.—Sen. and Jun. H.S.'s. £200 and £150 respectively.

Southampton Borough Hospital.—Res. M.O. £275.

Southampton, Royal South Hants and Southampton Hospital.—Sen. H.S. £225. Also Asst. H.S. £180.

Swansea County Borough.—Asst. M.O. £600.

Truro, Royal Cornwall Infirmary.—H.S. £170.

University of London.—Laura de Saliceto Studentship. £150.

Walsall, General Hospital.—Cas. H.S. At rate of £120.

Western Dispensary, Rochester Row, Westminster, S.W.—Res. M.O. and Dispenser. £150.

West African Medical Staff.—M.O.'s. Each £660.

West London Hospital, Hammersmith, W.—H.S., Aural and Ophth. H.S. Also Res. Asst. Cas. O. Each at rate of £100.

Weymouth and District Hospital.—H.S. £180.

Whipps Cross Hospital, Whipps Cross-road, Leytonstone, E.—Con. Oph. Surg. One afternoon fortnightly. £100.

Wigan Royal Infirmary.—Res. Med. and Surg. O. and Reg. £250. Also Two H.S.'s. Each at rate of £150.

Willesden General Hospital, N.W.—Clin. Asst. to Surg. Out-patient Dept.

Winchester, Royal Hampshire County Hospital.—Sen. Res. M.O. £200. Also H.P. and H.S. Each £150.

The Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Sittingbourne (Kent), and Bruton (Somerset).

The Secretary of State for the Home Department gives notice of a vacancy under the Workmen's Compensation Act for the Districts of the Caernarvon and Pwllheli County Courts (Circuit 29). Applications should be reach the Private Secretary, Home Office, Whitehall, London, not later than 21st June, 1930.

Births, Marriages, and Deaths.

BIRTHS.

BUIST.—On May 30th, at Dundee, the wife of Major T. P. Buist, R.A.M.C., of a son.

COOKE.—On May 29th, 1930, at the Stoneboro Nursing Home, to Betty, wife of Robert V. Cooke, F.R.C.S., 9, The Green, Llandaff—a son.

COTTER.—On May 22nd, the wife of Major E. Cotter, I.M.S., Eglantine, Cork, of a son.

HANSON.—On May 23rd, at Welbeck-street, the wife of David C. Hanson, M.C., M.B., New King's-road, Hurlingham, S.W., of a daughter.

HAWARD.—On May 22nd, at a nursing home, the wife of Dr. F. C. Haward, of a daughter.

SABONADIERE.—On May 25th, at Harvey House, Watton, Norfolk, the wife of R. W. Sabonadiere, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

DAVIES—FANING.—On May 24th, at Holy Trinity Church, Exmouth, D. S. Davies, M.D., to Mary, widow of the Rev. J. F. E. Faning, M.A.

GREENWOOD—JONES.—On May 31st, at Maze Hill Congregational Church, Greenwich, Eric John Greenwood, M.B., B.Ch., to Dorothy Helen Jones, elder daughter of Mr. and Mrs. W. G. Jones, of Greenwich.

DEATHS.

BROCK.—On June 1st, 1930, at Bloemfontein, O.F.S., South Africa, Benjamin George Brock, L.R.C.P. & S., D.P.H.Edin., aged 76 years.

CAMPBELL.—On May 26th, at Beech-hill-road, Eltham Park, London, Dr. Susan Campbell, of Ajmer, India.

GASTER.—On May 31st, at Devonshire-place, Anghel Gaster, M.D., M.R.C.P. Lond., aged 66.

JOHNSTON.—On June 1st, at a nursing home in Edinburgh, Robert McKenzie Johnston, M.D., F.R.C.S.E., of Lansdowne-crescent, Edinburgh.

MACLEOD.—On May 30th, at Craven-hill, W., Herbert William George Macleod, M.D., B.Sc., M.R.C.P. Lond., Barrister-at-Law, late Captain I.M.S., aged 69 years.

SANDALL.—On May 31st, at Springfield, Montalt-road, Woodford Green, Colonel Thomas Edward Sandall, C.M.G., T.D., M.D. Camb.

WINTER.—On May 28th, at Holne Brake, West Malvern, Dr. George Mitchell Winter, O.B.E., J.P., late of St. Marychurch, Torquay.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages and Deaths.

Notes, Comments, and Abstracts.

INFANT WELFARE WORK IN HOLLAND.

THE town council of Amsterdam undertook the work of municipal infant welfare in 1920, at a time when the Society for Infant Welfare felt unable to carry on the task. It was thought that this work offered remarkable opportunities not only for the prevention of disease and the reduction of infant mortality, but as a means of raising the cultural level of the population. The young mother with her first baby is faced with so serious a responsibility that she is peculiarly ready to accept advice, and the rules of hygiene instilled at a welfare centre will stand her in good stead in subsequent pregnancies. The report of the Municipal Health Service of Amsterdam for the five years between 1922 and 1926 records a steady increase in the number of centres, and mentions that 72 infant welfare conferences are now held weekly in various parts of the city. The staff of each welfare division consists of a chief, or leader, who is a full time officer, and of medical officers who do part-time work at the centres. Each centre has, in addition, a full time trained nurse, and 18 partly trained women, called kraamverzorgsters are attached to each division. The municipal midwives carry out their antenatal work in the building containing the welfare centre, and create a link between the expectant mothers and the welfare workers. Propaganda visits are made to young mothers and pregnant women, but if it is learned in any case that the family doctor has undertaken the care of the child, the clinic does not attempt to interfere further. Sick children are not treated at the centres, but the mothers are advised to go at once to their own doctors. At present the work of the clinic ends when the child passes its first birthday, but it is hoped that supervision will shortly be extended up to three years, when the child passes into the hands of the school doctor.

Statistics collected over the five years show that the average duration of supervision at the centre for each child increased from 21 weeks in 1922 to 29 weeks in 1926; in other words, the interest of the mothers is becoming more persistent as the value of the clinics becomes more widely appreciated. The number of children attending the centres, moreover, had increased from 4873, or 34·1 per cent. of live-born children in 1922, to 6357, or 46·7 per cent., of live-born children in 1926. Some interesting statistics have been compiled on infant feeding from information supplied by the various centres, and it is even possible to compare the results at individual centres by an analysis of these statistics. On the whole, almost three-fifths of the children attending the centres are breast-fed, at any rate for the first three months of life. One-fifth of infants are partially breast-fed, and the remainder are artificially fed, or the feeding is unknown. It is found that the proportion of breast-fed infants varies very little from year to year. It is yet too early to draw conclusions, but there is some evidence that the infant mortality-rate under one month is considerably lower among children attending the centres than among the general population.

RHEUMATISM IN CHILDHOOD.

IN his annual report on the St. Marylebone Children's Rheumatism Supervisory Centre for 1929, Dr. J. F. Halls Dally, the medical director, says that at this centre such therapeutic measures as may be found necessary are subsidiary to an inquiry into the nature of the constitution of rheumatic children. "Recent findings," he says, "tend to confirm previous conclusions that the rheumatic constitution can be detected by biochemical means. The most common abnormality of chemical constitution of the 'rheumatic soil' is faulty metabolism of calcium, phosphorus, magnesium, and sulphur. Corresponding with different clinical types which manifest different rheumatic symptoms, two biochemical groups can be differentiated. One group presents either no deviation of the acid-base equilibrium of the body, or a slight deviation to the alkaline side; this group does not, as a rule, suffer from cardiac rheumatism. The second group shows a deviation of the acid-base equilibrium to the acid side, and so far there has been no exception to the rule that cases of cardiac rheumatism fall into this latter class. It is significant that a very large proportion of all children investigated up to date yields no evidence whatsoever of any acute or chronic infective process. It would thus seem that most of the subjective symptoms can be accounted for by metabolic abnormalities alone."

Dr. Halls Dally says that an attempt is being made to interpret both clinical and biochemical findings in terms of endocrine function. The work of the centre is, in this way, being correlated with recent developments in research elsewhere, which, he believes, point to lack of balance or inadequacy of the glands of internal secretion as one of the primary causes of rheumatism.

SMOKE AND HEALTH.

THE joint committee of the Manchester and District Regional Smoke Abatement Committee and of the National Smoke Abatement Society have done well to include in their propaganda the lecture recently delivered at the College of Technology by Dr. J. S. Taylor, assistant medical officer of health for Manchester. Dr. Taylor deals with the subject in a clear and convincing manner. Charts illustrate the effect of fogs in Manchester in causing an increase in the deaths from respiratory diseases. The excess in infant and young child mortality in the towns, when compared with the country and in the northern industrial towns as compared with the southern towns, is shown in tabular form, and reasons are adduced to support the view that a smoky and dusty atmosphere is a prime cause in producing this relative excess. We have often called attention to the greater mortality from respiratory diseases in dirty-aired as compared with clean-aired towns, a greater mortality which falls especially on the young children. Dr. Taylor deals adequately with the biological action of light and the facts and references in the pamphlet should prove of value in arousing a demand among town-dwellers for a purer atmosphere in which to live.

The pamphlet (price 2*d.*) can be obtained from the office of the Societies, Civic Buildings, 1, Mount-street, Manchester.

HINDU MEDICAL TREATMENT.

THIS little book[1] is founded, as the author, Miss Dorothea Chaplin states, on the verbal and written teaching of the late Mr. S. M. Mitra, a lawyer and well-known publicist, whose views on many international and social questions found expressions at congresses and in the columns of the press. He became a psychotherapist, and in that capacity wrote a volume for the use of neurasthenic members of the public who consulted him, and in this he dealt specially with the treatment of nervous disorders by Hindu remedies. The Hindu practice, it appears, includes a form of psycho-analysis, in which specially prepared tales are read to the patient after which questions are asked which are calculated to elicit the various mental symptoms. These notes on Hindu medical treatment are too disjointed to give a coherent idea of what is being aimed at or what definite results have been obtained.

BRISTOL HOMŒOPATHIC HOSPITAL.

THIS institution, which last year received nearly 1000 in-patients, and treated 1695 out-patients, had a deficit of £3369 on its ordinary expenditure. The President, Mr. Melville Wills, has given £5000 to reduce the bank overdraft and £20,000 to the endowment fund. The work of the hospital, which has now been recognised as a training school for nurses, has so greatly increased that it is rapidly becoming impossible to carry it on in the present premises.

ABSINTHE DRINKING IN ENGLAND.

WE have received from Messrs. Gancia and Co., Ltd., Canelli, Italy, who are among the largest producers of vermouth, a letter traversing some of the facts contained in an article published in THE LANCET of April 26th under this heading. The Italian firm protest against the implication that the absinthe in vermouth forms an introduction to absinthe-drinking in England through the medium of cocktails. They write:—"We will at once confess that our brand of vermouth *does* contain the essential oil of absinthe, but to the negligible extent of three milligrammes of absinthol to one litre vermouth or, expressed in 'plain English,' about one 350,000th part by weight or volume. Why such a small proportion? Because we too know that many stimulants, taken in excess, are harmful, and because vermouth does not depend on any one herb for its special taste and aroma, but on prolonged maceration of many different plants in fortified wine. We believe that vermouths of other makes would also show much the same results, if analysed. We submit that such a small amount of absinthe in vermouth cannot be considered injurious; quite on the other hand, these few milligrammes form a valuable stimulant, besides improving the taste of the vermouth. However, should the British public, acting on Dr. Brasher's advice, disapprove of the presence of absinthe in vermouth at all, then we are quite prepared to eliminate it from our brand altogether, substituting other herbs which will give much the same effect without possessing the lethal properties which your doctor fears so much. We are afraid that the absinthe question in England has been confounded with the pure 70 per cent.

[1] Some Aspects of Hindu Medical Treatment. By Dorothea Chaplin. London: Luzac and Co. Pp. 71. 3*s.* 6*d.*

alcohol absinthe which was once upon a time allowed in France. We agree with Dr. Brasher that this beverage is injurious, unless drunk in exceedingly small quantities. What is required is moderation in these things. We scarcely think that the author of the article in question eschews tea and coffee completely, simply because they are injurious to the human system when drunk in excess, or that he refuses to ride in a motor-car because it is possible to drive it too fast!"

A CELEBRATED MEDIUM.

THE investigations into the phenomena produced in this country by Mrs. Piper, the American medium, are to be found in the Proceedings of the Society for Psychical Research, but those who are interested in the abnormal mental states known as mediumship will welcome an account of the life of this medium as recorded by her daughter.[1] The father and mother of Mrs. Piper were of English ancestry, deeply religious, and "strong, healthy, normal people," while the medium herself, the fourth of six children, seems to have heard voices and seen visions as early as her eighth year. Subsequently, Mrs. Piper further developed her unusual psychic qualities. After her mediumship had been investigated in America by Prof. William James of Harvard, and others, she was the subject of inquiry by the Society for Psychical Research in this country, and the book describes these investigations besides giving some account of the medium's home life. The volume is illustrated with reproductions of portraits of Mrs. Piper at various ages and of William James, F. W. H. Myers, Richard Hodgson, and Sir Oliver Lodge, as well as with specimens of automatic writing.

"BANTAM" COFFEE.

THERE is much waste in the making of coffee in the ordinary way, while the care necessary for properly preparing it takes up much time. These things are designed to be obviated by the use of "Bantam" coffee, a sample of which has been sent to us by the Bantam Products, Ltd., of Wortley, Leeds, with London offices at 9, Queen Victoria-street, E.C. 4. This consists of a brown granular powder which contains the soluble portion of the coffee bean. The powder can be completely dissolved in hot water, in cold water more slowly, and as there are no "grounds" left the beverage may be drunk to the last drop. It can be made in the cup at the table, or for large parties in an urn. The product should not be classed with "coffee essences," for on the palate it has the flavour of freshly roasted coffee prepared in the usual manner. If protected from moistu e it is claimed that the powder will remain unchanged for a long time, and certainly the preparation is economical in use.

THE DOCTOR'S JOB.

THIS small book[2] is introduced to medical readers in a few words by Sir Donald MacAlister, who commends it to the careful perusal of medical students. Undoubtedly every medical student will be better "qualified" for his profession if he his able to look at the general problems of social life in the clear manner that Dr. Lloyd-Williams employs for their elucidation. A chapter on the problems of medical practice is added for the consideration of the qualified, where the remarks on birth control are thoughtful

CABBAGES.

Mr. A. W. Hill, F.R.S., Director of Kew Gardens, who delivered a Chadwick lecture in the open air at the Chelsea Physic Garden on May 29th, said that the original cabbage was supposed to have arisen from the tears of Lycurgus whom Dionysus had bound to a vine; botanically every cabbage was descended from the indigenous *Brassica oleracea*, now to be seen covering the cliffs at Dover. It was a plant with a stem, leaves and many racemes, which men had altered to suit their own needs. The stem is developed in kohl-rabi (*caulis*, cole, kale, the stalk). The leaves had been grown into heads in the spring cabbage, in the curly savoy, in the red cabbage (which should never be pickled, but cut in slices and stewed in its own juice), and in the thousand-leaved kale grown for the winter food of sheep. The axillary buds become Brussels sprouts, which are anatomically bulbs. The inflorescence had been developed in the broccoli or cauliflower. No other plant has had so much advantage taken of its opportunities. Theophrastus mentions three kinds, Pliny six, de Candole (1834) 30; now there are a hundred kinds.

[1] The Life and Work of Mrs. Piper. By Alta L. Piper. With an introduction by Sir Oliver Lodge, F.R.S., D.Sc. London: Kegan Paul, Trench, Trübner and Co., Ltd., 1929. Pp. 204. 7s.6d.

[2] The Doctor's Job. By A. Lloyd-Williams, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond. Student Christian Movement Press. 1930. Pp. 72. 2s.

A STOKER'S LOG.

GENERALLY when people talk about ventilation on board ships it is to complain of draughts. It is the more satisfactory to learn from the account given by Mr. H. Vincent[1] of his time as a stoker in the Navy in the war, that when he moved from an old cruiser to the new flagship of the Harwich force, he found the new ventilation a comfort, fresh air being driven into every compartment, however small. As a stoker in the tropics he was never ill; on the contrary, he was always in good condition, and hungry for the hot and greasy dishes he had in his mess. He never heard a word against the quality of the "pusser's" provisions, though they would have been better without cockroaches. He drank water freely when "on the fires," and against advice, but never suffered from cramps; but then he does not tell us what quantity of salt he took in his mess. Stokers are, he thinks, the hardest working men in the ship, very kind to one another, even to the author when he had just joined. The worst crime in this branch of the service is to let the fire out; the next bad, to admit an allotted job too hard, or to look exhausted. The night runs from Harwich were made in constant anxiety, and it was at such times leave was most welcome, though at all times a luxury to men off a crowded, severely conditioned lower deck. This book contains many good and dramatic stories, and some excellent silhouettes.

HOSPITAL AND AUXILIARY SERVICES AT LIVERPOOL.

THE Merseyside Hospitals Council has issued a handy little "Guide to Hospital and Auxiliary Services" within the scope of that body. These services are many and of great variety, ranging from convalescent treatment and the loan of invalid furniture to the follow-up of out-patients and home nursing. The booklet forms an admirable conspectus of the auxiliary services which are being developed rapidly by this enterprising council. It should be of real and suggestive value to the similar organisations which are springing up all over the country.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 24TH, 1930.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 304 (last week 324); scarlet fever, 1887; diphtheria, 1167; enteric fever, 69; pneumonia, 1034; puerperal fever, 44; puerperal pyrexia, 103; cerebro-spinal fever, 15; acute poliomyelitis, 2; acute polio-encephalitis, 1; encephalitis lethargica, 10; dysentery, 2; ophthalmia neonatorum, 115. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the infectious hospitals of the London County Council on May 27th–28th was as follows: Small-pox, 462 under treatment, 13 under observation (last week 513 and 22 respectively); scarlet fever, 2036; diphtheria, 2376; enteric fever, 29; measles, 797; whooping-cough, 68; puerperal fever, 21 (plus 13 babies); encephalitis lethargica, 121; poliomyelitis, 1; "other diseases," 19. At St. Margaret's Hospital there were 17 babies (plus 6 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London there was no death from small-pox, 1 (0), from enteric fever, 45 (16) from measles, 6 (2) from scarlet fever, 28 (1) from whooping-cough, 29 (6) from diphtheria, 42 (12) from diarrhœa and enteritis under two years, and 39 (6) from influenza. The figures in parentheses are those for London itself.

The fatal case of enteric fever outside London occurred at Ilford. Deaths from measles are rapidly sinking, the highest figures being Liverpool, 4; Manchester and Salford, each 3 (Edinburgh has 8). Four deaths from whooping-cough are reported from Birmingham, and 3 from diphtheria. Liverpool is credited with 7 deaths from diarrhœa; Manchester with 5.

The number of stillbirths notified during the week was 287 (corresponding to a rate of 40 per 1000 births), including 57 in London.

[1] A Stoker's Log. By H. Vincent. London: Jarrolds Pp. 256. 6s.